

Modification of Authority-to-Construct Permit #1962-M2

Reliable Silver Corporation Technologies Inc.

Prepared for:



Permitting Division, Air Quality Program (AQP)
Albuquerque Environmental Health Department
P.O. Box 1293
Albuquerque, NM 87103

Prepared by:



INTERA Incorporated
2440 Louisiana Boulevard NE, Suite 700
Albuquerque, New Mexico 87110

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Table of Contents

1.0	Summary	4
2.0	Process Description	5
2.1	Processes Currently at the North Facility	5
2.2	New Equipment.....	8
2.3	New Processes to North Facility	9
2.4	Startup, Shutdown, Maintenance & Malfunction	9
2.5	Fugitive Emissions	10
2.6	Exempt Units.....	10
3.0	Emission Calculations.....	10
3.1	Previously Permitted Units.....	11
3.2	New Equipment.....	12
4.0	Applicable Regulations	16
4.1	Applicable New Mexico Administrative Code Regulations	16
4.2	Applicable Federal Requirements	16
4.3	Non-Applicable Federal Requirements.....	16
5.0	Air Dispersion Model.....	18
6.0	Best Available Control Technology Analysis.....	18

List of Figures

Figure 1	Site Map
Figure 2	Plot Plan
Figure 3	Aerial Photograph with Layout of Sources

List of Appendices

Appendix A	Pre-Application Requirements
Appendix B	Public Notice Requirements
Appendix C	20.11.41.13(D) NMAC
Appendix D	Application Contents

List of Tables

Table 1. Proposed Revisions to Authority-to-Construct Permit #1962-M2	4
Table 2. Emissions Summary Table.....	13
Table 2-1. Uncontrolled Emissions Summary.....	14
Table 2-2. Controlled Emissions	15

Acronyms and Abbreviations

µm	micron(s)
ATC	Authority-to-Construct
CFR	Code of Federal Regulations
CO	carbon monoxide
COA AQP	City of Albuquerque Air Quality Program
HAP	hazardous air pollutant
HEPA	high-efficiency particulate Air
lb(s)	pound(s)
lb/hr	pounds per hour
Materion	Materion Advanced Materials Technologies and Services Corp.
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NMAC	New Mexico Administrative Code
North facility	RSC North Facility
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM _{2.5}	particulate matter <2.5 µm diameter
PM ₁₀	particulate matter <10 µm diameter
RSC	Reliable Silver Corporation Technologies Inc.
SO ₂	sulfur dioxide
tpy	tons per year
TSP	total suspended particulate
VOC	volatile organic compound

1.0 Summary

This document is an application for a modification of Authority-to-Construct (ATC) Permit #1962-M2 for the RSC North facility. The facility is located at 5941 Midway Park Blvd. NE in Albuquerque, New Mexico (UTM 353,862 m E, 3,890,794 m N) and is currently operating.

On October 25, 2024, operations and the lease were transferred to Reliable Silver Corporation Technologies Inc. (RSC) of Naugatuck, Connecticut from former owner Materion Advanced Materials Technologies and Services Corp. (Materion). RSC seeks to modify equipment to their North facility. Table 1 below provides an overview of the proposed changes to the current North facility permit.

Table 1. Proposed Revisions to Authority-to-Construct Permit #1962-M2

Unit	Description	Action
A1	Belt Annealing Furnace	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
AG1	Melting Furnace	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
AG2	Melting Furnace	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
CAST-01	Vertical Casting	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
CAST-05	Vertical Casting	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
CAST-02	TMD Cast Target Reconditioning	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
CC3	Continuous Casting Furnace	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
EG1	Emergency Generator	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
FS-01	TMD Form Spray Process	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
FUM-05	TMD Cast Target Reconditioning	To be removed in this permit revision
IF1	Induction Furnace	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
IF2	Induction Furnace	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
LT-14	TMD Finishing Process	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
LT-15	TMD Finishing Process	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
MLL-09	TMD Finishing Process	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2

Unit	Description	Action
PS-01	TMD Thermal Spray	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
PS-02	TMD Finishing Process	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
PS-03	TMD Strip, Grit Blast, and Bond Coat	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
PS-04	TMD Strip, Grit Blast, and Bond Coat	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
PS-05	TMD Strip, Grit Blast, and Bond Coat	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
PS-06	TMD Strip, Grit Blast, and Bond Coat	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
PS-07	Thermal Spray Equipment	Will remain as currently permitted in Authority-to-Construct Permit 1962-M2
TS	Thermal Spray Systems	To be added in this permit revision

2.0 Process Description

This section describes the processes taking place at the North facility and the units/processes which are being added in this permit application.

2.1 Processes Currently at the North Facility

The North facility produces [REDACTED] fabricated products. The primary metal is [REDACTED] produced with a high degree of purity or alloyed with copper, tin, zinc, nickel, and/or palladium. The North facility processes customer supplied, non-toxic, [REDACTED] material including [REDACTED] shot, bars, billets, or scrap trimmings. The processing of [REDACTED] bearing materials can include the following steps: melting, milling, annealing, alloying, chemical/mechanical finishing. The saleable products are [REDACTED] or [REDACTED] alloy in the form of bars, strips, rods, and machined products.

[REDACTED] Products

The air pollutant emissions from the natural gas-fired belt annealing furnace (A1) are typical of an external combustion unit and include nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs), sulfur dioxide (SO₂), and particulate matter (PM). The electrically powered furnaces at the facility include the continuous casting furnace (CC3) and the induction furnaces (IF1 and IF2). IF2 is identical to IF1 and will serve as a backup unit if needed; however, it is currently stored on site and is not connected or operational.

Because CC3 is electrically powered, it is not a source of NO_x, CO, VOC, or SO₂ emissions. Under normal operating conditions, melting in CC3 is performed without the use of fluxes or other additives that would generate NO_x or particulate emissions. However, production of certain [REDACTED] alloys in CC3

may result in particulate emissions. Melting in this furnace is conducted in a nitrogen atmosphere, which limits oxidation of zinc to zinc oxide and does not result in NO_x emissions.

In the induction furnaces (IF1 and IF2), the process involves heating and melting metals under controlled conditions to maintain a low-oxygen environment. No fluxes or additives are used in this process that would result in particulate emissions beyond those otherwise accounted for in the emission calculations.

The steps in the target production include:

1. [REDACTED] shot, bars, or scrap trimmings pass through the continuous casting furnace (CC3), where the metal is melted and formed into strip, which is then roll milled to reduce thickness.
2. The material is routed through an annealing furnace (A1 or BA1) as needed then passed through the finish roller. The strip then undergoes a final annealing step (A1 or BA1). A strip may undergo multiple milling and annealing cycles before the desired thickness is achieved.
3. After annealing, the strip undergoes surface treatment.
4. The product is then cut and coiled for packaging as the finished product.

Targets

[REDACTED] cast billets are heated in an annealing furnace (IF1) and hot pressed in a mechanical press.

Target Products

The air pollutant emissions from the natural gas-fired melting furnaces (AG1 and AG2) are typical of external combustion units and include NO_x, CO, VOC, SO₂, and PM. The electrically powered annealing furnace used in this process (BA1) is not a source of criteria pollutant emissions.

Target Production Process

[REDACTED] target production consists of the following process steps and associated emission points:

1. **Melting and casting** – High-purity [REDACTED] and their alloys are melted in the gas-fired furnaces (AG1 and AG2) and cast into graphite molds to form rectangular billets. Emissions from this step are associated with combustion in AG1 and AG2.
2. **Rolling and annealing** – The billets are passed through a rolling mill and then through the mesh-belt electric annealing furnace (BA1) to soften the material for further rolling. BA1 is electrically powered and is not a source of criteria pollutant emissions. For certain alloys, approximately 20% of production, annealing is conducted under oxygen-free conditions.
3. **Flattening** – Once the required dimensions are achieved, the billet is placed in a flattening press to remove rolling-induced waves. This step does not have a dedicated emission point.
4. **Machining** – The billet is machined using computer numerical control milling machines or lathes to achieve the final customer-specified dimensions. Metal chips generated during machining are collected.
5. **Cleaning, inspection, and packaging** – The finished target is cleaned, quality-control inspected, and packaged for shipment. This step does not have a dedicated process exhaust.

Cast Target Reconditioning

Used rotatable [REDACTED] alloy sputtering targets returned by customers are reconditioned and recast. The targets are heated with a handheld propane burner (CAST-02) until the alloy softens enough to be removed manually. The recovered alloy is either recycled internally or sent off site for refining, depending on quality. Emissions from CAST-02 are vented to the room.

Form Spray Process

In the form spray process, solid metals are melted in an electric melt chamber and sprayed onto a rotating tube in FS-01. Argon is used as both a blanket gas and a carrier gas for the sprayed metals. For some alloys, MAPP gas is used to preheat the spray nozzle prior to melting. Overspray generated by FS-01 is routed to cartridge dust collector DC-11, located outside the building. Material collected in DC-11 is recycled and reused and therefore has process value. Remaining emissions from DC-11 are discharged to the atmosphere through a dedicated stack. DC-11 operates at 99.99% control efficiency.

Stripping, Grit Blast, and Bond Coat Process

Stripping and grit blast/bond coat operations are performed on [REDACTED] alloy targets, returned by customers, so the backing tube can be reused. The returned targets are heated using oxy-propane torches (PS-05), causing the coating to spall from the surface. The stripped tubes and new tubes are then grit blasted with alumina grit using PS-03 to roughen and clean the surface. A nickel-aluminum bonding layer is subsequently applied using wire bond equipment (PS-04 and PS-06). Emissions from PS-05, PS-03, PS-04, and PS-06 are routed to cartridge dust collector DC-01, located outside the building. Alumina grit is reclaimed and reused until it breaks down into particles small enough to be captured by the exhaust system. Material captured by DC-01 is recycled and has monetary value; accordingly, the dust collector is considered inherent to the process. DC-01 operates at 99.95% control efficiency.

Thermal Spray Process

In the thermal spray process, powders are injected into a plasma plume and deposited onto a rotating water-cooled tube in PS-01 to form a coating on clean targets. Overspray from PS-01 is routed through a cyclone separator and then to cartridge dust collector DC-05, where recoverable material is collected for recycling and reuse. Remaining emissions from DC-05 are discharged to the atmosphere. DC-05 operates at 99.97% control efficiency. Trace nickel emissions may occur due to the presence of a nickel-based bonding layer from earlier process steps. Zinc is also applied on this unit using wire bond technology.

Finishing Process

The finishing process includes machining and polishing of purchased, cast, and sprayed sputter targets and tubes. Alloy targets requiring machining are processed on lathes (LT-14 and LT-15) and mill MLL-09. These units are vented to the room. Metal chips are collected for disposal, and isopropanol is used as a coolant and lubricant. The targets are polished with Scotch-Brite pads while on the lathes, without coolant. Harder alloys are polished using belt sander PS-02. Emissions from PS-02 are routed to DC-01 for control; dust from this operation was previously routed to DC-02. DC-01 exhausts to the atmosphere and operates at 99.95% control efficiency. Isopropanol is also used as a final wipe-down cleaning agent for all targets.

Other Sources

The site also includes a Baldor 230-horsepower natural gas-fired emergency backup generator (EG1). Operation of EG1 is limited to 200 hours per year.

2.2 New Equipment

The new process utilizes [REDACTED] combustion wire thermal spray units to apply [REDACTED] coatings to rotated tubes. The sections below thoroughly describe the process and efficiencies.

[REDACTED] Systems

The [REDACTED] is a fully automated flame-spray coating system designed for high-precision, repeatable material deposition. [REDACTED]

Donaldson Torit Cyclone 30-10

The Donaldson Torit Model 30-10 cyclone dust collector is a mechanical particulate control device that utilizes centrifugal force to remove large, high-volume PM from industrial exhaust streams. In this configuration, the unit is equipped with a high-efficiency bag filter driven by an 8-horsepower motor and is rated for airflow capacities within the model's applicable range of approximately 300 to 13,000 cubic feet per minute. The cyclone, which features a 12-inch air inlet and a 14-inch air outlet, includes a 16.5-cubic-foot dust drawer and a 37.5-cubic-foot hopper for dust collection and product recovery. Heavy-duty construction supports extended service life with low maintenance requirements, and the removable cone section allows for ease of inspection and replacement. The collector meets applicable seismic criteria and wind load ratings up to 90 miles per hour (Exposure C), supporting deployment in industrial environments where durability and operational reliability are required.

Donaldson Torit DFE 4-16 cartridge filters

The Donaldson Torit DFE 4-16 cartridge filter system utilizes Ultra-Web permanent fine fiber filtration technology (0.2–0.3 microns [μm] in diameter) to achieve particulate removal with a reduced operating pressure drop. Fine fiber media promotes submicron filtration from 0.3–10 μm . The filter substrate is engineered for increased rigidity, durability, and cleanability, supporting reliable operation under industrial dust-loading conditions. The cartridges are rated at MERV 15 in accordance with ASHRAE Standard 52.2-2007, which can remove approximately 85% of particulate matter <2.5 μm in diameter ($\text{PM}_{2.5}$) and 90% of particulate matter <10 μm in diameter (PM_{10}), depending on operating conditions and dust characteristics. Reduced pressure drop contributes to lower fan energy consumption, while longer filter life minimizes replacement frequency and maintenance requirements. The cartridge filters are lightweight and designed for ease of installation, with optional flame-retardant media and stainless-steel construction available for applications requiring enhanced fire resistance or corrosion protection.

Donaldson Torit Ultra-Lok HEPA filters

The Donaldson Torit Ultra-Lok HEPA filter is a modular, high-efficiency final filtration unit designed to provide particulate control. The system functions as backup filtration in the event of primary dust collector leakage and incorporates high-efficiency particulate air (HEPA) final filters rated at 99.97 % removal efficiency for particles 0.3 μm in diameter. The Ultra-Lok housing is configurable to accommodate 1, 2, 3, 4, 6, 8, 9, or 12 HEPA filters and Air-O-J prefilters. A pressure gauge is included to facilitate performance monitoring and identify service or filter replacement needs. The unit provides tool-free access from both sides for efficient filter changeout and maintenance. Constructed of durable 14-gauge carbon steel, the system is designed to resist corrosion and support long service life. The compact, self-contained system can recirculate filtered air back into the workspace, reducing reliance on make-up air and associated energy costs.

2.3 New Processes to North Facility

The [REDACTED] coating process is performed using a [REDACTED] acetylene flame-spray system (TS) configured with a robotic spray arm, operating within sealed spray compartments. [REDACTED] wire is melted in an acetylene-fuel flames and atomized onto target substrates, producing overspray and combustion byproducts that are captured through a multi-stage particulate control system. The exhaust stream from each compartment is treated sequentially by a cyclone, cartridge filters, and HEPA filters to recover [REDACTED] material and minimize PM emissions prior to local recirculation within the wire-coating room. The steps of the [REDACTED] spray process are as follows:

1. [REDACTED] wire is fed into the [REDACTED] flame-spray gun (TS), where acetylene combustion generates a high-temperature flame to melt the wire.
2. A robotic arm manipulates the spray gun to apply [REDACTED] coatings onto substrates within sealed, dedicated spray compartments.
3. Each spray compartment generates an exhaust air stream containing combustion gases and overspray [REDACTED] particulate, which is continuously drawn from the enclosure to prevent indoor fugitive emissions. The exhaust air enters a Donaldson Torit Model 30-10 cyclone dust collector (DT-C), where centrifugal forces separate coarse PM and recoverable overspray [REDACTED] into a hopper or dust drawer.
4. Air exiting the cyclone passes through Donaldson Torit DFE 4-16 cartridge filters (DT-DFE), capturing fine PM.
5. The filtered air then flows through Donaldson Torit Ultra-Lok HEPA filters (DT-U), serving as final control and backup filtration. The filtered air is recirculated locally into the wire-coating room.
6. A separate air exchanger supplies filtered air to the [REDACTED] room, while room air is vented to the atmosphere without a dedicated exhaust stack.

The cyclone, cartridge filters, and HEPA system operate as an integrated control train primarily to recover [REDACTED] material and to reduce PM concentrations within the coating operation area.

2.4 Startup, Shutdown, Maintenance & Malfunction

All process equipment at RSC is operated in batch mode. Start-up and shutdown of process equipment is part of normal daily operation. During bag house maintenance or in the event of a malfunction, the

associated furnaces will be shut down. The Air Quality Program will be notified in the event that abnormal emissions from malfunction, start-up, and/or shutdown exceed permitted limits.

2.5 Fugitive Emissions

Any emissions from facility processes are generated inside the building and routed to one of the main stacks which is then sent to the bag house or to the atmosphere through a general exhaust. As a result of this facility setup, there are no fugitive emissions.

2.6 Exempt Units

Process equipment units BLD-01, CAST-01, CAST-02, CAST-05, LT-14, LT-15, and MLL-09 are considered exempt sources and are not required to obtain an air permit.

Power Blending

Powder blending operations combine specified quantities of powder materials for use as feed to the plasma spray process. The materials are initially transferred on a downdraft table, which captures dust generated during transfer. Emissions from the downdraft table are vented to the room. The materials are then screened under an argon blanket and mixed in an enclosed “Vee”-type blender (BLD-01).

TMD Vertical Casting

Vertical casting operations (CAST-01 and CAST-05) involve melting [REDACTED] alloys in electrically heated furnaces. The molten metal is then cast into vertical molds to form alloy cylinders. Propane-fired burners are used to maintain the metal in a molten state while the mold cavity is filled. After cooling, the molds are opened and the cast rotatables are sent to finishing. Because these casting units are electrically heated, they do not have combustion-related emissions associated with the furnace operation itself.

Cast Target Reconditioning

Used rotatable [REDACTED] alloy sputtering targets are returned by customers for reconditioning and recasting. The targets are heated with a handheld propane burner (CAST-02) until the alloy softens sufficiently to be removed by scraping with hand tools. The recovered alloy is either recycled internally or sent off site for refining, depending on quality.

Finishing Process

The finishing process includes machining and polishing of purchased, cast, and sprayed sputter targets and tubes. Alloy targets requiring machining are processed on lathes (LT-14 and LT-15) and mill MLL-09. Metal chips generated during machining are collected for disposal, and isopropanol is used as a coolant and lubricant. The targets are then polished with Scotch-Brite pads while on the lathes, without coolant.

3.0 Emission Calculations

Emission calculations are provided in **Appendix C** and will also be submitted to the City of Albuquerque Air Quality Program (COA AQP) in Excel format on a thumb drive.

This permit application includes removal of the previously permitted Tube Recycling Equipment (FUM-05). All other equipment previously permitted under Permit No. 1962-M2 will remain in place, with the following revisions reflected in this application and supporting modeling:

- updated stack heights, stack diameters, and vertical release characterizations for DC-02, DC-05, and DC-11;
- routing of emissions from PS-02 to DC-01 as described;
- relocation of the emission release point for the belt annealing furnace (A1) as described; and
- revision of the baghouse (BH-1) stack height and diameter.

Unless otherwise noted, emissions for the units described below were calculated using AP-42 emission factors and/or material balance approaches, as appropriate, and were based on 8,760 hours of operation per year. Where particulate emissions were estimated, it was conservatively assumed that total suspended particulate (TSP) = PM_{10} = $PM_{2.5}$. For controlled units, the uncontrolled emission rate is conservatively used as the requested emission rate unless otherwise noted.

No changes to emission rates are proposed for existing units other than those identified above. Calculation pages for the remaining existing units have been carried forward from the most recent previously submitted application (#1962-M2, 2020) and are included in Appendix C for reference.

3.1 Previously Permitted Units

Units AG1 and AG2 – Natural Gas-Fired Melting Furnaces

Emissions from Units AG1 and AG2 are typical of external combustion units and include NO_x , CO, VOC, SO_2 , PM, and hazardous air pollutants (HAPs). Emissions were calculated using AP-42 Tables 1.4-1 and 1.4-2, with total HAP emissions estimated using GRI-HAPCalc 3.01. A heat input rate of 1 MMBtu/hr was used as a conservative assumption. These units are controlled by baghouse BH-1, which operates at 99.9% control efficiency.

Units IF1 and IF2 – Electric Induction Furnaces

Metals are melted in the electric induction furnaces (IF1 or backup unit IF2) under a natural gas atmosphere to maintain a low-oxygen environment. Emissions were conservatively calculated assuming that the natural gas used to create the low-oxygen atmosphere is completely combusted. Emissions were calculated using AP-42 Tables 1.4-1 and 1.4-2, and total HAP emissions were estimated using GRI-HAPCalc 3.01. These units are also controlled by baghouse BH-1, which operates at 99.9% control efficiency.

Unit CC3 – Electric Continuous Casting Furnace

Unit CC3 is electrically powered and therefore is not a source of CO, VOC, or SO_2 emissions. During typical operation, melting is conducted without fluxes or other additives that would result in NO_x or particulate emissions, and melting under a nitrogen atmosphere does not generate NO_x .

Some [REDACTED] alloys may be produced in Unit CC3, which may result in particulate emissions.

Particulate emissions from zinc usage were calculated based on 500 pounds of zinc used per year using the AP-42 Table 12.9-2 emission factor for brass as a surrogate for zinc-containing [REDACTED] alloy. The fugitive component of the emission factor was conservatively included, although fugitive emissions are

not expected from operation at the North Facility. Unit CC3 is controlled by baghouse BH-1, which operates at 99.9% control efficiency.

Unit A1 – Natural Gas-Fired Belt Annealing Furnace

Emissions from Unit A1 are typical of an external combustion unit and include NO_x, CO, VOC, SO₂, PM, and HAPs. Emissions were calculated using AP-42 Tables 1.4-1 and 1.4-2, and total HAP emissions were estimated using GRI-HAPCalc 3.01. As part of this permit modification, removal of the north stack results in a shift of the A1 emission release point to the roof penetration above the unit.

Unit EG1 – Emergency Generator

The emergency generator is permitted to operate for a maximum of 200 hours per year. Emissions of NO_x, CO, and VOC were calculated using manufacturer data provided by Baldor. Emission factors from AP-42 Table 3.2-3 were used to estimate SO₂ and particulate emissions, and total HAP emissions were estimated using GRI-HAPCalc 3.01. Uncontrolled annual emissions were based on 8,760 hours per year, while controlled annual emissions were based on the permitted 200 hours per year of operation.

Unit PS-02 – Tube Polishing Equipment

Emissions from Unit PS-02 were estimated using a material balance of incoming and post-process material. There are no combustion emissions associated with this unit.

Unit FS-01 – Form Spray Equipment

Emissions from Unit FS-01 were estimated using a material balance of incoming and post-process material. There are no combustion emissions associated with this unit.

Unit PS-05 – Strip

Emissions of NO_x, CO, VOC, SO₂, and PM from Unit PS-05 were estimated using AP-42 Section 1.5, Table 1.5-1, for combustion of liquefied petroleum gas. SO₂ emissions were based on 5 grains sulfur per 100 standard cubic feet of pipeline-quality gas.

Units PS-03, PS-04, and PS-06 – Strip, Grit Blast, and Bond Coat

Emissions from Units PS-03, PS-04, and PS-06 were estimated using a material balance of incoming and post-process material. There are no combustion emissions associated with these units. Because nickel-containing product is processed by these units, associated HAP emissions were estimated using a material balance of nickel-bearing materials.

Unit PS-01 and PS-07 – Thermal Spray Equipment

Emissions from Units PS-01 and PS-07 were estimated using a material balance of incoming and post-process material. There are no combustion emissions associated with these units.

3.2 New Equipment

The [REDACTED] Acetylene System (TS) emission calculations are contained in **Appendix C** and account for the three systems to be incorporated. [REDACTED] PM emissions routed through the filtration system are determined using the following equation and presented in **Table 2**:

$$\text{Weight Percent} * \text{Total [REDACTED] Consumption Rate} / 100 * (1 - \text{Filtration System Control Efficiency})$$

The properties for [REDACTED] were determined via ASTM [REDACTED], a standard specification for [REDACTED] electrical contact fabricated material.

Combustion emissions are presented in **Table 2**. Emission factors from combustion activities were obtained from “Research on Environmental Impact Assessment of Flame Oxyacetylene Welding Processes” to best quantify similar combustion emissions from similar fuel sources. Otherwise, VOC, PM₁₀, and PM_{2.5} emissions are assumed to be similar to natural gas combustion emission factors presented in AP-42, Chapter 1.4, Table 1.4-2. **Table 2** utilizes the following equation:

$$\text{Emission Factor (ppm)} / 10^6 * \text{Mass Flow of Exhaust (lb/hr)} = \text{Emission rate (lb/hr)}$$

Particulate emissions conservatively assumed that TSP = PM₁₀ = PM_{2.5}. Emission summary of the total Combustion Wire Thermal Spray Operation are displayed in **Table 2**, with overall constituents emitted below 1 pound per hour (lb/hr).

Table 2. Emissions Summary Table

Constituent	Spray Emissions		Combustion Emissions		Total Emissions	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CO	-	-	0.0181	0.0795	0.0181	0.0795
NO _x	-	-	0.0038	0.0165	0.0038	0.0165
SO ₂	-	-	0.0107	0.0469	0.0107	0.0469
VOC	-	-	0.0013	0.0058	0.0013	0.0058
PM ₁₀	0.0002	0.0002	0.0009	0.0040	0.0011	0.0042
PM _{2.5}	0.0002	0.0002	0.0009	0.0040	0.0011	0.0042
HAPs	0.0000	0.0000	-	-	0.0000	0.0000

Notes:

CO = carbon monoxide

HAP = hazardous air pollutant

lb/hr = pounds per hour

NO_x = nitrogen oxides

PM₁₀ = particulate matter <10 µm diameter

PM_{2.5} = particulate matter <2.5 µm diameter

SO₂ = sulfur dioxide

tpy = tons per year

VOC = volatile organic compound

Table 2-1. Uncontrolled Emissions Summary

Unit	CO (lb/hr)	CO (tpy)	NO _x (lb/hr)	NO _x (tpy)	VOC (lb/hr)	VOC (tpy)	SO ₂ (lb/hr)	SO ₂ (tpy)	TSP (lb/hr)	TSP (tpy)	PM ₁₀ (lb/hr)	PM ₁₀ (tpy)	PM _{2.5} (lb/hr)	PM _{2.5} (tpy)	Total HAP (lb/hr)	Total HAP (tpy)
AG1	0.021	0.092	0.025	0.11	0.0014	0.006	0.00015	0.00066	0.0019	0.0083	0.0019	0.0083	0.0019	0.0083	0.00064	0.0028
AG2	0.021	0.092	0.025	0.11	0.0014	0.006	0.00015	0.00066	0.0019	0.0083	0.0019	0.0083	0.0019	0.0083	0.00064	0.0028
IF1	0.0063	0.028	0.0075	0.033	0.00041	0.0018	0.000045	0.00020	0.00057	0.0025	0.00057	0.0025	0.00057	0.0025	0.0026	0.011
IF2																
CC3	-	-	-	-	-	-	-	-	0.00057	0.0025	0.00057	0.0025	0.00057	0.0025	-	-
A1	0.33	1.43	0.39	1.71	0.021	0.094	0.0023	0.010	0.03	0.13	0.03	0.13	0.03	0.13	0.010	0.045
EG1	22.04	2.20	1.38	0.14	0.53	0.053	0.00060	0.000060	0.02	0.002	0.02	0.002	0.02	0.002	0.074	0.01
PS-02	-	-	-	-	-	-	-	-	0.049	0.22	0.049	0.22	0.049	0.22	0.0023	0.010
FS-01	-	-	-	-	-	-	-	-	0.77	3.38	0.77	3.38	0.77	3.38	-	-
PS-05	0.00092	0.0040	0.0016	0.0070	0.00012	0.00054	0.000061	0.00027	0.17	0.75	0.17	0.75	0.17	0.75	0.014	0.063
PS-03, PS-04, PS-06	-	-	-	-	-	-	-	-	11.484	50.30	11.484	50.30	11.484	50.30	0.00033	0.0014
PS-01	-	-	-	-	-	-	-	-	0.0098	0.043	0.0098	0.043	0.0098	0.043	0.00035	0.0015
PS-07	-	-	-	-	-	-	-	-	0.0098	0.043	0.0098	0.043	0.0098	0.043	0.00035	0.0015
TS	0.0181	0.0795	0.0038	0.0165	0.0013	0.0058	0.0107	0.0469	4.05	4.20	4.05	4.20	4.05	4.20	0.00000	0.00000
Total	22.44	3.93	1.83	2.13	0.56	0.17	0.014	0.059	16.60	59.09	16.60	59.09	16.60	59.09	0.11	0.15

Notes:

CO = carbon monoxide

HAP = hazardous air pollutant

lb/hr = pounds per hour

NO_x = nitrogen oxides

PM₁₀ = particulate matter <10 µm diameter

PM_{2.5} = particulate matter <2.5 µm diameter

SO₂ = sulfur dioxide

tpy = tons per year

TSP = total suspended particulate

VOC = volatile organic compound

Table 2-2. Controlled Emissions Summary

Unit	CO (lb/hr)	CO (tpy)	NO _x (lb/hr)	NO _x (tpy)	VOC (lb/hr)	VOC (tpy)	SO ₂ (lb/hr)	SO ₂ (tpy)	TSP (lb/hr)	TSP (tpy)	PM ₁₀ (lb/hr)	PM ₁₀ (tpy)	PM _{2.5} (lb/hr)	PM _{2.5} (tpy)	Total HAP (lb/hr)	Total HAP (tpy)
AG1	0.021	0.092	0.025	0.11	0.0014	0.006	0.00015	0.00066	0.0019	0.0083	0.0019	0.0083	0.0019	0.0083	0.00064	0.0028
AG2	0.021	0.092	0.025	0.11	0.0014	0.006	0.00015	0.00066	0.0019	0.0083	0.0019	0.0083	0.0019	0.0083	0.00064	0.0028
IF1	0.0063	0.028	0.0075	0.033	0.00041	0.0018	0.000045	0.0002	0.00057	0.0025	0.00057	0.0025	0.00057	0.0025	0.0026	0.011
IF2																
CC3 ¹	-	-	-	-	-	-	-	-	0.000000 57	0.000002 5	0.000000 57	0.000002 5	0.000000 57	0.000002 5	-	-
A1	0.33	1.43	0.39	1.71	0.021	0.094	0.0023	0.010	0.03	0.13	0.03	0.13	0.03	0.13	0.01	0.045
EG1	22.04	2.20	1.38	0.14	0.53	0.053	0.00060	0.00006 0	0.02	0.002	0.02	0.002	0.02	0.002	0.074	0.01
PS-02	-	-	-	-	-	-	-	-	0.000025	0.00011	0.000025	0.00011	0.000025	0.00011	0.0000012	0.000005
FS-01	-	-	-	-	-	-	-	-	0.000077	0.00034	0.000077	0.00034	0.000077	0.00034	-	-
PS-05	0.00092	0.0040	0.0016	0.0070	0.00012	0.00054	0.000061	0.00027	0.000086	0.00038	0.000086	0.00038	0.000086	0.00038	0.014	0.063
PS-03, PS-04, PS-06	-	-	-	-	-	-	-	-	0.0057	0.025	0.0057	0.025	0.0057	0.025	0.00000016	0.00000071
PS-01	-	-	-	-	-	-	-	-	0.0098	0.043	0.0098	0.043	0.0098	0.043	0.00035	0.0015
PS-07	-	-	-	-	-	-	-	-	0.0098	0.043	0.0098	0.043	0.0098	0.043	0.00035	0.0015
TS	0.0181	0.0795	0.0038	0.0165	0.0013	0.0058	0.0107	0.0469	0.0011	0.0042	0.0011	0.0042	0.0011	0.0042	0.00000	0.00000
Total	22.44	3.93	1.83	2.13	0.56	0.17	0.014	0.059	0.081	0.27	0.081	0.27	0.081	0.27	0.10	0.14

Notes:

¹ PM controlled 99.9% by BH-1

CO = carbon monoxide

HAP = hazardous air pollutant

lb/hr = pounds per hour

NO_x = nitrogen oxides

PM₁₀ = particulate matter <10 µm diameter

PM_{2.5} = particulate matter <2.5 µm diameter

SO₂ = sulfur dioxide

tpy = tons per year

TSP = total suspended particulate

VOC = volatile organic compound

4.0 Applicable Regulations

The following sections identify regulations that apply to the facility, as well as regulations that may initially appear applicable but have been determined not to apply. The applicable and non-applicable requirements discussed below are drawn from 20 New Mexico Administrative Code (NMAC) 11 and Title 40 of the Code of Federal Regulations (CFR).

4.1 Applicable New Mexico Administrative Code Regulations

The following New Mexico regulations apply:

- 20.11.1 NMAC General Provisions
- 20.11.2 NMAC Permit Fees
- 20.11.5 NMAC Visible Contaminants
- 20.11.41 NMAC Authority to Construct

4.2 Applicable Federal Requirements

Applicable federal regulations are discussed here.

- **40 CFR 63, Subpart A – General Provisions**
This subpart is applicable as 40 CFR 63 Subpart ZZZZ applies.
- **40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants**
Unit EG1 is a stationary reciprocating internal combustion engine, located at an area source of HAPs, which commenced construction after June 12, 2006. Pursuant to 40 CFR § 63.6590(c)(1), this unit must comply with the requirements of Subpart ZZZZ by meeting the applicable requirements of 40 CFR 60, Subpart JJJJ for spark ignition engines. However, under 40 CFR § 60.4230(a)(4)(iv), Unit EG1 is not subject to Subpart JJJJ because the engine was manufactured before January 1, 2009. A record of this applicability determination will be maintained on site in accordance with 40 CFR § 63.10(b).

4.3 Non-Applicable Federal Requirements

Federal requirements determined not to apply are summarized below.

- **40 CFR 50 – National Ambient Air Quality Standards (NAAQS)**
40 CFR 50 establishes NAAQS but does not impose direct requirements on individual stationary sources. Accordingly, this part is not directly applicable to the facility.
- **40 CFR 60, Subpart A – General Provisions**
Subpart A contains general provisions that apply only when a specific New Source Performance Standard (NSPS) applies to a source. Because no NSPS applies to this facility, Subpart A is not applicable.

- **40 CFR 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines**
Although Unit EG1 commenced construction after June 12, 2006, the engine was manufactured before January 1, 2009. Pursuant to 40 CFR § 60.4230(a)(4)(iv), Unit EG1 is not subject to Subpart JJJJ. This subpart is therefore not applicable. A record of this applicability determination will be maintained on site.
- **40 CFR 61 – National Emissions Standards for Hazardous Air Pollutants (NESHAP)**
No standards under 40 CFR 61 have been identified as applicable to this facility. In the event of future demolition activities involving asbestos-containing material, 40 CFR 61, Subpart M may become applicable.
- **40 CFR 63, Subpart FFFFFFFF – NESHAP for Secondary Copper Smelting Area Sources**
Under 40 CFR § 63.11158, a secondary copper smelter is a facility that processes copper scrap in a blast furnace and converter or uses another pyrometallurgical purification process to produce anode copper from copper scrap, including low-grade copper scrap. A facility that melts recycled copper scrap or copper alloy scrap to produce ingots or for direct use in a manufacturing process is not considered a secondary copper smelter. This subpart does not apply because the facility does not conduct secondary copper smelting operations, and any scrap processed contains negligible amounts of copper.
- **40 CFR 63, Subpart TTTTTT – NESHAP for Secondary Nonferrous Metals Processing Area Sources**
Under 40 CFR § 63.11472, a secondary nonferrous metals processing facility is defined as a brass and bronze ingot making, secondary magnesium processing, or secondary zinc processing plant that uses furnace melting operations to melt post-consumer nonferrous metal scrap to produce bars, ingots, blocks, or metal powders. This subpart does not apply because the facility does not conduct these types of operations, and the scrap processed contains negligible amounts of the regulated nonferrous metals associated with this rule.
- **40 CFR 68 – Accidental Release Prevention Program**
This regulation implements Section 112(r) of the Clean Air Act and applies when specific regulated substances are present in process above threshold quantities listed in 40 CFR § 68.130. The facility does not manufacture, process, use, store, or otherwise handle any regulated substance more than the applicable threshold quantity. Therefore, 40 CFR 68 does not apply.

Excerpt from 40 CFR § 68.130 – Tables 1 and 4, List of Regulated Toxic/Flammable Substances Stored and Used at the RSC North Facility and Threshold Quantities for Applicability of 40 CFR 68

Chemical Name	CAS No.	Maximum Stored on Site (lbs)	Threshold quantity (lbs)
Hydrogen	1333-74-0	56.5	10,000

5.0 Air Dispersion Model

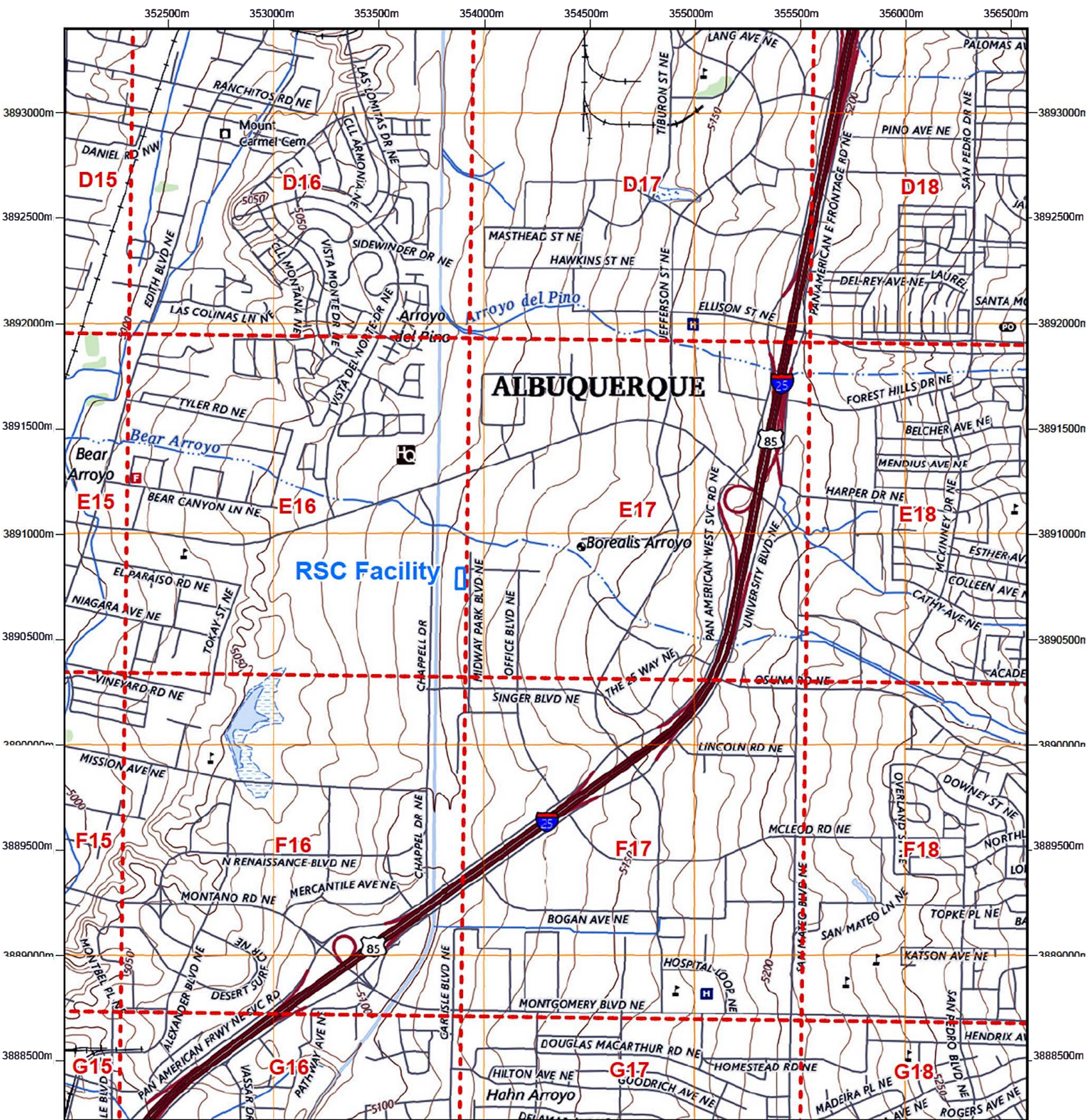
Following the pre-application meeting with the COA AQP, the City of Albuquerque requested that an air dispersion model be prepared and submitted. In accordance with COA AQP guidelines, the modeling protocol was submitted on January 23, 2026, for review and approval. COA AQP approved the modeling protocol subject to minor revisions, which were subsequently incorporated. INTERA Incorporated also received additional data and guidance from COA AQP during development of the final model.

The modeling report and results are included in **Appendix C**. The modeling demonstrates that operation of the identified equipment, including the proposed thermal spray system (TS), will not cause or contribute to exceedances of NAAQS or New Mexico Ambient Air Quality Standards. As shown in the calculations provided in **Appendix C**, the emission increase for each pollutant associated with the proposed modification is less than 1 lb/hr.

6.0 Best Available Control Technology Analysis

The RSC North Facility is located approximately 0.75 miles from a designated overburdened area. Because the facility is within one mile of an overburdened area, discussion of the potential applicability of a Best Available Control Technology (BACT) analysis was required under 20.11.72 NMAC. BACT is generally defined as the maximum degree of emission reduction achievable, taking into account energy, environmental, and economic impacts, as well as other costs. Accordingly, a BACT analysis was prepared and is included in **Appendix D**. Based on that analysis, the proposed process configuration represents BACT for the source, and no technically feasible and economically reasonable alternative control option was identified that would provide a greater degree of emission reduction.

FIGURES



Legend

 RSC Facility

 City Zone Atlas

1 inch = 2,000 ft

0

0.25

0.5

Miles

North Facility
RSC Technologies
Albuquerque, New Mexico

APPENDIX A

Pre-Application Requirements



**City of Albuquerque
Environmental Health Department
Air Quality Program**



Pre-Permit Application Meeting Request Form

Please complete appropriate boxes and email to aqd@cabq.gov or mail to:

Environmental Health Department
Air Quality Program
Permitting Division
P.O. Box 1293
Albuquerque, NM 87103

A copy of this form must be included as part of the application package.

Company/Organization:	Reliable Silver Corporation				
Current Permit #:	1962-M2				
Point of Contact: (phone number and email): Preferred form of contact (check one): ☒ Phone ☒ E-mail	Name: Karen Flores Phone: (505) 340-3160 Email: kflores@intera.com				
Preferred meeting dates/times: (provide several dates/times when applicant/consultant are available in the 1-2 weeks after submitting this form)	1 st date/ time(s) 9/17, 10:30- 11:30am	2 nd date/ time(s) 9/18, 8:30- 11:30pm	3 rd date/ time(s) 9/18, 12:30- 3:00pm	4 th date/ time(s) 9/19, 8:30- 11:30am	5 th date/ time(s) 9/24, 12:30- 3:30pm
Preferred meeting type (Zoom/In Person):	Zoom				
Description of Project:	Reliable Silver Corporation is planning to add a new process to their existing facility. The new process will utilize three combustion wire thermal spray units to apply [REDACTED] coatings to rotating tubes. The process has an 85-90% efficiency with remaining overspray captured by a hood and dual-duct system. There is a robust collection system to capture fine particulates and after-filters for backup control that allow for a greater than 99.9% capture efficiency.				



City of Albuquerque Environmental Health Department Air Quality Program



Construction Permit (20.11.41 NMAC) Pre-Permit Application Meeting Agenda Checklist & Public Notice Sign Guidelines Checklist

This entire document, including both completed checklists, must be included as part of the application package.

Any person seeking a new permit, a permit modification, or an emergency permit under 20.11.41 NMAC (Construction Permits) shall do so by filing a written application with the Albuquerque-Bernalillo County Joint Air Quality Program, which administers and enforces local air quality laws for the City of Albuquerque ("City") and Bernalillo County ("County"), on behalf of the City Environmental Health Department ("Department").

Prior to submitting an application, per 20.11.41.13(A) NMAC, the applicant (or their consultant) shall contact the Department in writing and submit a Pre-Permit Application Meeting Request Form to request a pre-application meeting. The Pre-Permit Application Meeting Request Form is available at <https://www.cabq.gov/airquality/air-quality-permits/air-quality-application-forms>. The purpose of the pre-application meeting is for the Department to provide the applicant with information regarding the contents of the application and the application process.

This pre-application meeting agenda checklist is provided to aid the Department and applicant in ensuring that in the pre-permit application meeting all information regarding the contents of the application and the application process are communicated to the applicant. This is because applications that are ruled incomplete because of missing information will delay any determination or the issuance of the permit. The Department reserves the right to request additional relevant information prior to ruling the application complete in accordance with 20.11.41 NMAC.

Also included in this document is the Public Notice Sign Guidelines Checklist, which contains requirements for how the applicant must display the required weather-proof sign.

The applicant should fill out and have this agenda checklist available at the pre-application meeting to be sure all items are covered. Check the boxes to acknowledge that each item from the agenda was discussed and that requirements for the weather-proof sign were followed.

Pre-Permit Application Meeting Agenda Checklist

Applicant Company Name: **Reliable Silver Corporation Technologies, Inc.**

Facility Name: **North Facility**

☒ Fill out and submit a Pre-Permit Application Meeting Request form
Available online at <https://www.cabq.gov/airquality/air-quality-permits/air-quality-application-forms/air-quality-application-forms>

- I. ☒ Discuss Project:
- a. Facility Location
 - b. Facility Description
 - c. Main Processes
 - d. Equipment
 - e. Proposed Schedule
- II. ☐ Discuss the requirement for a zoning certification or verifications for new permits and permit modifications. The Zoning Requirement Cover Page form is a required component of this part of the submittal:
- a. For projects on property subject to City or County zoning laws (*i.e.*, **not** located on federal land, **not** located on State of New Mexico land, **not** located on Tribal land), a zoning certification from the appropriate planning department is required.
 - i. City Planning Form: <https://www.cabq.gov/planning/code-enforcement-zoning>
 - ii. County Planning Form: <https://www.bernco.gov/planning/planning-and-land-use/applications-forms/>
 - b. If the project's property is not subject to City or County zoning jurisdiction, a zoning verification from both planning departments is required.
 - i. City Planning Form: <https://www.cabq.gov/planning/code-enforcement-zoning>
 - ii. County Planning Form: <https://www.bernco.gov/planning/planning-and-land-use/applications-forms/>
 - c. The zoning certification or verifications **must** be obtained from the appropriate Planning Department, either City of Albuquerque or Bernalillo County. For more information, please visit the City's Planning Department website at <https://www.cabq.gov/planning> or Bernalillo County's Planning Department website at the <https://www.bernco.gov/planning/>.
- III. ☒ Discuss the requirement for a Compliance History Disclosure Form as of Nov. 6, 2023 for permit application submittals except for Administrative Revisions that are not transfers of ownership.
- IV. ☒ Discuss the potential requirement for a BACT Analysis for new permits and permit modifications per 20.11.72 NMAC.
- a. Required if new or modifying stationary source is within a one-mile radius of an overburdened area, as described in 20.11.72.8(C) NMAC; or
 - b. Required if new or modifying stationary source emits any one, or combination of, the fifteen hazardous air pollutants (HAPs) listed in 20.11.72.8(D) NMAC.
- V. ☐ If permit modification or revision, review current permit:
- a. Review Process Equipment Table and Emissions Table and discuss changes
 - b. Request information about the replacement or new equipment (for example, if it is an engine, we need to know if it is new, what year, fuel type, etc...) to give them an idea of the changes that will be needed
 - c. Discuss possible changes in permit conditions

- VI. ☐ Air Dispersion modeling process, procedures and options:
- When modeling is required and possibility of waivers
 - Protocol process, purpose, and time frame
 - Preliminary review, purpose, and time frame
 - Full review and time frame
 - Peer reviews
 - Assumptions in the modeling become permit conditions
 - NED data should be used instead of DEM data for assigning elevations to receptors, sources, buildings, etc.
- VII. ☒ Applicant's public notice requirements
- During the same month application package will be submitted, ask Department for memo of neighborhood associations/coalitions within ½ mile of facility
 - Fill out and send Notice of Intent to Construct form as attachment, with Applicant Notice Cover Letter as email body, to neighborhood associations/coalitions listed in memo:
<https://www.cabq.gov/airquality/air-quality-permits/air-quality-application-forms>
 - Post and maintain a weather-proof sign. Signs are available in the downtown Program office. The Public Notice Sign Guidelines Checklist can be found on the next page of this document.
- VIII. ☒ Regulatory timelines
- 30 days to rule application complete
 - 90 days after ruled complete for permitting decision
 - 30-day public comment period after application deemed complete
 - If public interest in application:
 - 30-day review of technical analysis
 - 90-day extension for permitting decision
 - Request for Public Information Hearing - 90-day extension for permitting decision
 - Complex technical issues in application - 90-day extension for permitting decision
 - If application ruled incomplete it stops timeline and restarts at beginning with updated submittal
- IX. ☐ Department Policies
- One original hard copy must be submitted along with a duplicate copy. The duplicate copy should be a high-quality electronic duplicate submitted on thumb drive as one complete PDF with all application contents found in the hardcopy, including pages with signatures. However, do not include financial information, such as a copy of a check, in the electronic PDF. The electronic submittal should also include emission calculations Excel-compatible file(s) and modeling files, if applicable.
 - Applications will be ruled incomplete if any parts from Permit Application Checklist are missing
 - Review fees paid in full are part of the application package (Except as noted above)
 - Discuss payment format (by check, credit card or online)
 - Use the most recent Permit Application Checklist, found under Part 41 Implementation on this page:
<https://www.cabq.gov/airquality/air-quality-permits/air-quality-application-forms>
 - After three tries, permit application denied and application must start over including repayment of fees
- X. ☐ Additional Questions?



City of Albuquerque Environmental Health Department Air Quality Program



Public Notice Sign Guidelines

Any person seeking a permit under 20.11.41 NMAC, Construction Permits, shall do so by filing a written application with the Department. *Prior to submitting an application, the applicant shall post and maintain a weather-proof sign provided by the department. The applicant shall keep the sign posted until the department takes final action on the permit application; if an applicant can establish to the department's satisfaction that the applicant is prohibited by law from posting, at either location required, the department may waive the posting requirement and may impose different notification requirements. A copy of this form must be submitted with your application.*

Applications that are ruled incomplete because of missing information will delay any determination or the issuance of the permit. The Department reserves the right to request additional relevant information prior to ruling the application complete in accordance with 20.11.41 NMAC.

Applicant Company Name: **Reliable Silver Corporation Technologies, Inc.**

Facility Name: **North Facility**

- ☒ The sign must be posted at the more visible of either the proposed or existing facility entrance (or, if approved in advance and in writing by the department, at another location on the property that is accessible to the public)
- ☒ The sign shall be installed and maintained in a condition such that members of the public can easily view, access, and read the sign at all times.
- ☒ The lower edge of the sign board should be mounted a minimum of 2 feet above the existing ground surface to facilitate ease of viewing
- ☒ Include at least two pictures of the completed, properly posted sign in the application package immediately following this document. One picture should show the location of the posted sign and the other should be close enough to the sign for the posted information to be legible in the picture.
- ☐ **Check here if the department has waived the sign posting requirement.**
Alternative public notice details:

APPENDIX B

Public Notice Requirements



Timothy M. Keller, Mayor

Public Participation

List of Neighborhood Associations and Neighborhood Coalitions MEMORANDUM



Dr. Whitney S. Craig, Director

To: Karen Flores, Environmental Project Manager
From: Kyle Tumpane, Senior Environmental Health Scientist
Subject: Determination of Neighborhood Associations and Coalitions
within one (1) mile of 5941 Midway Park Pl. NE in Bernalillo County, NM
Date: August 10, 2026

DETERMINATION:

On August 10, 2026 I used the City of Albuquerque Advanced Map Viewer (<https://www.cabq.gov/gis/advanced-map-viewer>) to verify which City of Albuquerque Neighborhood Associations (NA) and Neighborhood Coalitions (NC), and which Bernalillo County (BC) NAs and NCs are located within one (1) mile of 5941 Midway Park Pl. NE in Bernalillo County, NM.

I then used the City of Albuquerque (COA) Office of Neighborhood Coordination's Monthly Master NA List dated August 2026 and the Bernalillo County (BC) Monthly Neighborhood Association August 2026 Excel file to determine the contact information for each NA and NC located within one (1) mile of 5941 Midway Park Pl. NE in Bernalillo County, NM.

The table below contains the contact information which shall be used in the Applicant's public notice. Duplicates have been deleted.

COA/BC Association or Coalition	Name	Email or Mailing Address*
Del Norte Neighborhood Association	Mary White Mary Bernard	white1ink@aol.com fourofseven@comcast.net
District 4 Coalition of Neighborhood Associations	Lorna Howerton Vanessa Stranski	hhowerton9379@msn.com annapresident505@gmail.com
El Camino Real Neighborhood Association	Lora De La Rue Linda Trujillo	delaruelora@gmail.com trujilloabqbc@comcast.net
North Edith Corridor Association	Tina Villegas Tania Gonzalez	t-marie-v@hotmail.com tserafin30@gmail.com
North Valley Coalition	Peggy Norton Eleanor Walther Coalition Email	peggynorton@yahoo.com eawalth@comcast.net nvcabq@gmail.com
Vista Del Norte Alliance	James Souter Perry Chapman Alliance Email	jamesssouter@msn.com PCHAPMAN2149@AOL.COM vistadelnorte@me.com

**If email address is not listed, provide public notice via certified mail and include a copy of each mail receipt with the application submittal.*

This NA/NC determination memo, along with PDF proof of emails sent and the PDF Notice of Intent form, must be included with the permit application submittal.

NOTICE FROM THE APPLICANT

Notice of Intent to Apply for Air Quality Construction Permit

You are receiving this notice because the New Mexico Air Quality Control Act (20.11.41.13B NMAC) requires any owner/operator proposing to construct or modify a facility subject to air quality regulations to provide public notice by certified mail or electronic mail to designated representatives of recognized neighborhood associations and coalitions within 0.5-mile of the property on which the source is or is proposed to be located.

This notice indicates that the owner/operator intends to apply for an Air Quality Construction Permit from the Albuquerque – Bernalillo County Joint Air Quality Program. Currently, no application for this proposed project has been submitted to the Air Quality Program. Applicants are required to include a copy of this form and documentation of mailed notices with their Air Quality Construction Permit Application.

Proposed Project Information

Applicant's name and address:

*Nombre y domicilio del
solicitante:*

Reliable Silver Corporation, 5941 Midway Park Boulevard NE, Albuquerque, NM 87109

Owner / operator's name and address:

*Nombre y domicilio del
propietario u operador:*

Sean Newcomb, 5941 Midway Park Boulevard NE, Albuquerque, NM 87109

Contact for comments and inquires:

Datos actuales para comentarios y preguntas:

Name (*Nombre*): Jayson Carruth

Address (*Domicilio*): 5941 Midway Park Boulevard NE, Albuquerque, NM 87109

Phone Number (*Número Telefónico*): (505) 948-8595

E-mail Address (*Correo Electrónico*): jcarruth@reliablesilver.com

Actual or estimated date the application will be submitted to the department:

Fecha actual o estimada en que se entregará la solicitud al departamento: August 18, 2026

Description of the source:

Descripción de la fuente: Metal fabrication

Exact location of the source or proposed source:

*Ubicación exacta de la fuente o
fuente propuesta:*

5941 Midway Park Boulevard NE, Albuquerque, NM 87109

Nature of business:

Tipo de negocio: Metal fabrication facility

Process or change for which the permit is requested:

*Proceso o cambio para el cuál de solicita el
permiso:*

Addition of thermal spray process

Maximum operating schedule:

Horario máximo de operaciones: 12am - 12am

Normal operating schedule:

Horario normal de operaciones: 5am - 10pm

Preliminary estimate of the maximum quantities of each regulated air contaminant the source will emit:
Estimación preliminar de las cantidades máximas de cada contaminante de aire regulado que la fuente va a emitir:

Air Contaminant <i>Contaminante de aire</i>	Proposed Construction Permit <i>Permiso de Construcción Propuesto</i>		Net Changes (for permit modification or technical revision) <i>Cambio Neto de Emisiones (para modificación de permiso o revisión técnica)</i>	
	pounds per hour <i>libras por hora</i>	tons per year <i>toneladas por año</i>	pounds per hour <i>libras por hora</i>	tons per year <i>toneladas por año</i>
NO_x	1.8	8.32	0.00	0.02
CO	22.42	7.48	0.02	0.08
VOC	0.55	0.65	0.00	0.01
SO₂	0.55	0.65	0.00	0.01
PM₁₀	0.73	3.50	0.00	0.00
PM_{2.5}	0.73	3.50	0.00	0.00
HAP	0.12	0.19	0.00	0.00

Questions or comments regarding this Notice of Intent should be directed to the Applicant. Contact information is provided with the Proposed Project Information on the first page of this notice. To check the status of an Air Quality Construction Permit application, call 311 and provide the Applicant's information, or visit www.cabq.gov/airquality/air-quality-permits.

The Air Quality Program will issue a Public Notice announcing a 30-day public comment period on the permit application for the proposed project when the application is deemed complete. The Air Quality Program does not process or issue notices on applications that are deemed incomplete. More information about the air quality permitting process is attached to this notice.

Air Quality Construction Permitting Overview

This is the typical process to obtain an Air Quality Construction Permit for Synthetic Minor and Minor sources of air pollution from the Albuquerque – Bernalillo County Joint Air Quality Program.

Step 1: Pre-application Meeting: The Applicant and their consultant must request a meeting with the Air Quality Program to discuss the proposed action. If air dispersion modeling is required, Air Quality Program staff discuss the modeling protocol with the Applicant to ensure that all proposed emissions are considered.

Notice of Intent from the Applicant: Before submitting their application, the Applicant is required to notify all nearby neighborhood associations and interested parties that they intend to apply for an air quality permit or modify an existing permit. The Applicant is also required to post a notice sign at the facility location.

Step 2: Administrative Completeness Review and Preliminary Technical Review: The Air Quality Program has 30 days from the day the permit is received to review the permit application to be sure that it is administratively complete. This means that all application forms must be signed and filled out properly, and that all relevant technical information needed to evaluate any proposed impacts is included. If the application is not complete, the permit reviewer will return the application and request more information from the Applicant. Applicants have three opportunities to submit an administratively complete application with all relevant technical information.

Public Notice from the Department: When the application is deemed complete, the Department will issue a Public Notice announcing a 30-day public comment period on the permit application. This notice is distributed to the same nearby neighborhood associations and interested parties that the Applicant sent notices to, and published on the Air Quality Program's website.

During this 30-day comment period, individuals have the opportunity to submit written comments expressing their concerns or support for the proposed project, and/or to request a Public Information Hearing. If approved by the Environmental Health Department Director, Public Information Hearings are held after the technical analysis is complete and the permit has been drafted.

Step 3: Technical Analysis and Draft Permit: Air Quality Program staff review all elements of the proposed operation related to air quality, and review outputs from advanced air dispersion modeling software that considers existing emission levels in the area surrounding the proposed project, emission levels from the proposed project, and meteorological data. The total calculated level of emissions is compared to state and federal air quality standards and informs the decision on whether to approve or deny the Applicant's permit.

Draft Permit: The permit will establish emission limits, standards, monitoring, recordkeeping, and reporting requirements. The draft permit undergoes an internal peer review process to determine if the emissions were properly evaluated, permit limits are appropriate and enforceable, and the permit is clear, concise, and consistent.

Public Notice from the Department: When the technical analysis is complete and the permit has been drafted, the Department will issue a second Public Notice announcing a 30-day public comment period on the technical analysis and draft permit. This second Public Notice, along with the technical analysis documentation and draft permit, will be published on the Air Quality Program's website, and the public notice for availability of the technical analysis and draft permit will only be directly sent to those who requested further information during the first comment period.

Air Quality Construction Permitting Overview

During this second 30-day comment period, residents have another opportunity to submit written comments expressing their concerns or support for the proposed project, and/or to request a Public Information Hearing.

Possible Public Information Hearing: The Environmental Health Department Director may decide to hold a Public Information Hearing for a permit application if there is significant public interest and a significant air quality issue. If a Public Information Hearing is held, it will occur after the technical analysis is complete and the permit has been drafted.

Step 4: Public Comment Evaluation and Response: The Air Quality Program evaluates all public comments received during the two 30-day public comment periods and Public Information Hearing, if held, and updates the technical analysis and draft permit as appropriate. The Air Quality Program prepares a response document to address the public comments received, and when a final decision is made on the permit application, the comment response document is published on the Air Quality Program's website and distributed to the individuals who participated in the permit process. If no comments are received, a response document is not prepared.

Step 5: Final Decision on the Application: After public comments are addressed and the final technical review is completed, the Environmental Health Department makes a final decision on the application. If the permit application meets all applicable requirements set forth by the New Mexico Air Quality Control Act and the federal Clean Air Act, the permit is approved. If the permit application does not meet all applicable requirements, it is denied.

Notifications of the final decision on the permit application and the availability of the comment response document is published on the Air Quality Program's website and distributed to the individuals who participated in the permit process.

The Department must approve a permit application if the proposed action will meet all applicable requirements and if it demonstrates that it will not result in an exceedance of ambient air quality standards. Permit writers are very careful to ensure that estimated emissions have been appropriately identified or quantified and that the emission data used are acceptable.

The Department must deny a permit application if it is deemed incomplete three times, if the proposed action will not meet applicable requirements, if estimated emissions have not been appropriately identified or quantified, or if the emission data are not acceptable for technical reasons.

For more information about air quality permitting, visit www.cabq.gov/airquality/air-quality-permits

Karen Flores

From: Karen Flores
Sent: Tuesday, August 18, 2026 4:16 PM
To: hhowerton9379@msn.com; annapresident505@gmail.com
Subject: Public Notice of Proposed Air Quality Construction Permit Application Reliable Silver Corporation Technologies Inc. – North Facility
Attachments: Notice of Intent_RSC_260818.pdf

Dear District 4 Coalition of Neighborhood Associations,

Why did I receive this public notice?

You are receiving this notice in accordance with New Mexico Administrative Code (NMAC) 20.11.41.13.B(1) which requires any applicant seeking an Air Quality Construction Permit pursuant to 20.11.41 NMAC to provide public notice by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.

What is the Air Quality Permit application review process?

The City of Albuquerque, Environmental Health Department, Air Quality Program (Program) is responsible for the review and issuance of Air Quality Permits for any stationary source of air contaminants within Bernalillo County. Once the application is received, the Program reviews each application and rules it either complete or incomplete. Complete applications will then go through a 30-day public comment period. Within 90 days after the Program has ruled the application complete, the Program shall issue the permit, issue the permit subject to conditions, or deny the requested permit or permit modification. The Program shall hold a Public Information Hearing pursuant to 20.11.41.15 NMAC if the Director determines there is significant public interest and a significant air quality issue is involved.

What do I need to know about this proposed application?

Applicant Name	Reliable Silver Corporation Technologies Inc.
Site or Facility Name	North Facility
Site or Facility Address	5941 Midway Park Boulevard NE, Albuquerque, NM 87109
New or Existing Source	Existing
Anticipated Date of Application Submittal	August 18, 2026
Summary of Proposed Source to Be Permitted	The application is to modify existing Construction Permit #1962-M2. The proposed modification includes installation of new equipment at the existing facility and removal of one existing unit.

What emission limits and operating schedule are being requested?

See attached Notice of Intent to Construct form for this information.

How do I get additional information regarding this proposed application?

For inquiries regarding the proposed source, contact:

- Jayson Carruth
- jcarruth@reliablesilver.com

- (505) 948-8595

For inquiries regarding the air quality permitting process, contact:

- City of Albuquerque Environmental Health Department Air Quality Program
- aqd@cabq.gov
- (505) 768-1972

Thank you,

Karen Flores



Karen Flores

She/Her

Environmental Project Manager

INTERA Incorporated

📍 2440 Louisiana Blvd NE, Suite 700, Albuquerque, New Mexico, 87110

📞 505-340-3160 📱 505-977-5888 🌐 www.INTERA.com



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Karen Flores

From: Karen Flores
Sent: Tuesday, August 18, 2026 4:15 PM
To: white1ink@aol.com; fourofseven@comcast.net
Subject: Public Notice of Proposed Air Quality Construction Permit Application Reliable Silver Corporation Technologies Inc. – North Facility
Attachments: Notice of Intent_RSC_260818.pdf

Dear Del Norte Neighborhood Association,

Why did I receive this public notice?

You are receiving this notice in accordance with New Mexico Administrative Code (NMAC) 20.11.41.13.B(1) which requires any applicant seeking an Air Quality Construction Permit pursuant to 20.11.41 NMAC to provide public notice by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.

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- jcarruth@reliablesilver.com

- (505) 948-8595

For inquiries regarding the air quality permitting process, contact:

- City of Albuquerque Environmental Health Department Air Quality Program
- aqd@cabq.gov
- (505) 768-1972

Thank you,

Karen Flores



Karen Flores

She/Her

Environmental Project Manager

INTERA Incorporated

📍 2440 Louisiana Blvd NE, Suite 700, Albuquerque, New Mexico, 87110

📞 505-340-3160 📱 505-977-5888 🌐 www.INTERA.com



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Karen Flores

From: Karen Flores
Sent: Tuesday, August 18, 2026 4:17 PM
To: 'delaruelora@gmail.com'; 'trujilloabqbc@comcast.net'
Subject: Public Notice of Proposed Air Quality Construction Permit Application Reliable Silver Corporation Technologies Inc. – North Facility
Attachments: Notice of Intent_RSC_260818.pdf

Dear El Camino Real Neighborhood Association,

Why did I receive this public notice?

You are receiving this notice in accordance with New Mexico Administrative Code (NMAC) 20.11.41.13.B(1) which requires any applicant seeking an Air Quality Construction Permit pursuant to 20.11.41 NMAC to provide public notice by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.

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- jcarruth@reliablesilver.com

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- aqd@cabq.gov
- (505) 768-1972

Thank you,

Karen Flores



Karen Flores

She/Her

Environmental Project Manager

INTERA Incorporated

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Karen Flores

From: Karen Flores
Sent: Tuesday, August 18, 2026 4:18 PM
To: t-marie-v@hotmail.com; tserafin30@gmail.com
Subject: Public Notice of Proposed Air Quality Construction Permit Application Reliable Silver Corporation Technologies Inc. – North Facility
Attachments: Notice of Intent_RSC_260818.pdf

Dear North Edith Corridor Association,

Why did I receive this public notice?

You are receiving this notice in accordance with New Mexico Administrative Code (NMAC) 20.11.41.13.B(1) which requires any applicant seeking an Air Quality Construction Permit pursuant to 20.11.41 NMAC to provide public notice by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.

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- jcarruth@reliablesilver.com

- (505) 948-8595

For inquiries regarding the air quality permitting process, contact:

- City of Albuquerque Environmental Health Department Air Quality Program
- aqd@cabq.gov
- (505) 768-1972

Thank you,

Karen Flores



Karen Flores

She/Her

Environmental Project Manager

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📞 505-340-3160 📱 505-977-5888 🌐 www.INTERA.com



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Karen Flores

From: Karen Flores
Sent: Tuesday, August 18, 2026 4:19 PM
To: peggynorton@yahoo.com; eawalth@comcast.net; nvcabq@gmail.com
Subject: Public Notice of Proposed Air Quality Construction Permit Application Reliable Silver Corporation Technologies Inc. – North Facility
Attachments: Notice of Intent_RSC_260818.pdf

Dear North Valley Coalition,

Why did I receive this public notice?

You are receiving this notice in accordance with New Mexico Administrative Code (NMAC) 20.11.41.13.B(1) which requires any applicant seeking an Air Quality Construction Permit pursuant to 20.11.41 NMAC to provide public notice by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.

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- jcarruth@reliablesilver.com

- (505) 948-8595

For inquiries regarding the air quality permitting process, contact:

- City of Albuquerque Environmental Health Department Air Quality Program
- aqd@cabq.gov
- (505) 768-1972

Thank you,

Karen Flores



Karen Flores

She/Her

Environmental Project Manager

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Karen Flores

From: Karen Flores
Sent: Tuesday, August 18, 2026 4:20 PM
To: jamessouter@msn.com; PCHAPMAN2149@AOL.COM; vistadelnorte@me.com
Subject: Public Notice of Proposed Air Quality Construction Permit Application Reliable Silver Corporation Technologies Inc. – North Facility
Attachments: Notice of Intent_RSC_260818.pdf

Dear Vista Del Norte Alliance,

Why did I receive this public notice?

You are receiving this notice in accordance with New Mexico Administrative Code (NMAC) 20.11.41.13.B(1) which requires any applicant seeking an Air Quality Construction Permit pursuant to 20.11.41 NMAC to provide public notice by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.

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- Jayson Carruth
- jcarruth@reliablesilver.com

- (505) 948-8595

For inquiries regarding the air quality permitting process, contact:

- City of Albuquerque Environmental Health Department Air Quality Program
- aqd@cabq.gov
- (505) 768-1972

Thank you,

Karen Flores



Karen Flores

She/Her

Environmental Project Manager

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941

RSC

941-A

NO PARKING
FIRE
RESPONSE
ZONE



Proposed Air Quality Construction Permit
Permiso de Construcción de Calidad del Aire Propuesto



- Applicant's Name:**
Nombre del solicitante: RELIABLE SILVER CORPORATION
Owner or Operator's Name:
Nombre del Propietario u Operador: SEAN NEWCOMB
- Actual or Estimated Date the Application will be Submitted to the Department:**
Fecha Actual o Estimada en que se Entragará la Solicitud al Departamento: APRIL 20, 2024
- Exact Location of the Source or Proposed Source:**
Ubicación Exacta de la Fuente o Fuente Propuesta: 5941 MIDWAY PARK BOULEVARD NE, ALBUQUERQUE, NM 87109
- Description of the Source:**
Descripción de la Fuente: METAL FABRICATION
Nature of Business:
Tipo de Negocio: METAL FABRICATION FACILITY
Process or change for which a permit is requested:
Proceso o cambio para el cual se solicita el permiso: ADDITION OF THERMAL SPRAY PROCESS

Preliminary estimate of the maximum quantities of each regulated air contaminant the source will emit:
Estimación preliminar de las cantidades máximas de cada contaminante de aire regulado que la fuente va a emitir:

Air Contaminant Contaminante de Aire	Proposed Construction Permit Permiso de Construcción Propuesto		Net Change Emissions (for permit modification or technical revision) Cambio Neto de Emisiones (para modificación de permiso o revisión técnica)	
	Pounds per hour libras por hora	Tons per year toneladas por año	Pounds per hour libras por hora	Tons per year toneladas por año
NO _x	1.80	8.32	+ 0.00	+ 0.02
CO	22.42	7.48	+ 0.02	+ 0.08
VOC	0.55	0.45	+ 0.00	+ 0.01
SO ₂	0.01	0.30	+ 0.01	+ 0.05
PM ₁₀	0.73	3.50	+ 0.00	+ 0.00
PM _{2.5}	0.73	3.50	+ 0.00	+ 0.00
HAP	0.12	0.19	+ 0.00	+ 0.00

- Maximum Operating Schedule:**
Horario Máximo de Operaciones: 12 AM TO 12 PM
Normal Operation Schedule:
Horario Normal de Operaciones: 5 AM TO 10 PM
- Current Contact Information for Comments and Inquiries**
Datos actuales para Comentarios y Preguntas
Name (Nombre): JAYSON CARBUTH
Address (Domicilio): 5941 MIDWAY PARK BOULEVARD NE
Phone Number (Número Telefónico): (505) 949-8595
Email Address (Correo Electrónico): JCARBUTH@RELIABLESILVER.COM

Call 311 for additional information concerning this project, the Air Quality Program, or to file a complaint.
Llame al 311 para obtener información adicional sobre este proyecto, del Programa de Calidad del Aire, o para presentar una queja.
Gọi 311 để biết thêm thông tin hoặc để khiếu nại về dự án này, Chương Trình Chất Lượng Không Khí
City of Albuquerque, Environmental Health Department, Air Quality Program - Stationary Source Permitting
Ciudad de Albuquerque, Departamento de Salud Ambiental, Programa de Calidad del Aire - Permisos para Fuentes Inmóviles
(505) 768-1972, aqd@cabq.gov

THIS SIGN SHALL REMAIN POSTED UNTIL THE DEPARTMENT TAKES FINAL ACTION ON THE PERMIT APPLICATION
ESTE AVISO DEBERÁ DE MANTENERSE PUESTO HASTA QUE EL DEPARTAMENTO TOMA UNA DECISIÓN SOBRE LA SOLICITUD DE PERMISO

APPENDIX C

20.11.41.13(D) NMAC



**City of Albuquerque – Environmental Health Department
Air Quality Program**

Please mail this application to **P.O. Box 1293, Albuquerque, NM 87103**
or hand deliver between 8:00 am – 5:00 pm Monday – Friday to:
3rd Floor, Suite 3023 – One Civic Plaza NW, Albuquerque, NM 87102
(505) 768-1972 aqd@cabq.gov



**Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)**

Submittal Date: 8/26/26

Owner/Corporate Information ☐ Check here and leave this section blank if information is exactly the same as Facility Information below.

Company Name: Reliable Silver Corporation Technologies Inc.			
Mailing Address: 5941 Midway Park Blvd NE	City: Albuquerque	State: NM	Zip: 87109
Company Phone: (505) 343-9440	Company Contact: Jayson Carruth		
Company Contact Title: EHS & Security Manager	Phone: (505) 948-8595	E-mail: jcarruth@reliablesilver.com	

Stationary Source (Facility) Information: Provide a plot plan (legal description/drawing of the facility property) with overlay sketch of facility processes, location of emission points, pollutant type, and distances to property boundaries.

Facility Name: North Facility			
Facility Physical Address: 5941 Midway Park Blvd	City: Albuquerque	State: NM	Zip: 87109
Facility Mailing Address (if different):	City:	State:	Zip:
Facility Contact: Jayson Carruth	Title: EHS & Security Manager		
Phone: (505) 948-8595	E-mail: jcarruth@reliablesilver.com		
Authorized Representative Name ¹ : Karen Flores	Authorized Representative Title: Environmental Project Manager, Consultant		

Billing Information ☒ Check here if same contact and mailing address as corporate ☐ Check here if same as facility

Billing Company Name:			
Mailing Address:	City:	State:	Zip:
Billing Contact:	Title:		
Phone:	E-mail:		

Preparer/Consultant(s) Information ☐ Check here and leave section blank if no Consultant used or Preparer is same as Facility Contact.

Name: Karen Flores	Title: Environmental Project Manager		
Mailing Address: 2440 Louisiana Blvd NE, Suite 700	City: Albuquerque	State: NM	Zip: 87110
Phone: (505) 340-3160	Email: kflores@intera.com		

1. See 20.11.41.13(E)(13) NMAC.

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

General Operation Information (if any question does not pertain to your facility, type N/A on the line or in the box)

Permitting action being requested (please refer to the definitions in 20.11.40 NMAC or 20.11.41 NMAC):				
☐ New Permit	☒ Permit Modification Current Permit #: 1962-M2	☐ Technical Permit Revision Current Permit #:	☐ Administrative Permit Revision Current Permit #:	
☐ New Registration Certificate	☐ Modification Current Reg. #:	☐ Technical Revision Current Reg. #:	☐ Administrative Revision Current Reg. #:	
UTM coordinates of facility (Zone 13, NAD 83): UTM N: 3,890,774 UTM E: 353,885				
Facility type (<i>i.e.</i> , a description of your facility operations): Metal fabrication				
Standard Industrial Classification (SIC Code #): 3341		North American Industry Classification System (NAICS Code #): 331492		
Is this facility currently operating in Bernalillo County? Yes		If YES , list date of original construction: 1976 If NO , list date of planned startup:		
Is the facility permanent? Yes		If NO , list dates for requested temporary operation: From Through		
Is the facility a portable stationary source? No		If YES , is the facility address listed above the main permitted location for this source?		
Is the application for a physical or operational change, expansion, or reconstruction (<i>e.g.</i> , altering process, or adding, or replacing process or control equipment, etc.) to an existing facility? Yes				
Provide a description of the requested changes: Addition of thermal spray equipment to existing process line				
What is the facility's operation? ☐ Continuous ☐ Intermittent ☒ Batch				
Estimated percent of production/operation:	Jan-Mar: 25%	Apr-Jun: 25%	Jul-Sep: 25%	Oct-Dec: 25%
Requested operating times of facility:	24 hours/day	7 days/week	52 weeks/month	12 months/year
Will there be special or seasonal operating times other than shown above? This includes monthly- or seasonally-varying hours. No				
If YES , please explain:				
List raw materials processed: alloying metals				
List saleable item(s) produced: alloys in machined form				

USE INSTRUCTIONS: For the forms on the following pages, please do not alter or delete the existing footnotes or page breaks. If additional footnotes are needed then add them to the end of the existing footnote list for a given table. Only update the rows and cells within tables as necessary for your project. Unused rows can be deleted from tables. If multiple scenarios will be represented then the Uncontrolled and Controlled Emission Tables, and other tables as needed, can be duplicated and adjusted to indicate the different scenarios.

**Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)**

Regulated Emission Sources Table

(E.g., Generator-Crusher-Screen-Conveyor-Boiler-Mixer-Spray Guns-Saws-Sander-Oven-Dryer-Furnace-Incinerator-Haul Road-Storage Pile, etc.) Match the Units listed on this Table to the same numbered line if also listed on Emissions Tables & Stack Table.

Unit Number and Description ¹		Manufacturer	Model #	Serial #	Manufacture Date	Installation Date	Modification Date ²	Process Rate or Capacity (Hp, kW, Btu, ft ³ , lbs, tons, yd ³ , etc.) ³	Fuel Type
AG1	Melting Furnace		N/A	N/A	Unknown	Jan 2013	N/A	250 MBtu/HR	Natural Gas
AG2	Melting Furnace		N/A	N/A	Unknown	Jan 2013	N/A	250 MBtu/HR	Natural Gas
IF1	Induction Furnace		Inducto 500	45080-07	Unknown	Jan 2013	N/A	75 MBtu/HR	Electric
IF2	Induction Furnace		Unknown	Unknown	Unknown	2009	N/A	75 MBtu/HR	Electric
CC3	Continuous Casting Furnace		RT850	SMH007	2006	2007	N/A	N/A	Electric
A1	Belt Annealing Furnace		DWG 31536-A	J3645.01	1982	2007	N/A	3,900 MBtu/HR	Natural Gas
EG1	Emergency Generator		IGLC80N-G	P08061000 01	2008	2009	N/A	150 hp	Natural Gas
PS-02	Finishing Process		B2-3C	P0103	Unknown	2/2017	N/A	Approximately 3300 finished targets/yr	N/A
FS-01	Form Spray Process		Custom	Custom	2012	2/2017	N/A	Approximately 800 tubes/yr	N/A
PS-05	Strip, Grit Blast, and Bond Coat		Custom	Custom	Unknown	2/2017	N/A	Approximately 1,000 stripping tubes/yr and 1,250 new tubes/yr	Propane
PS-03, PS-04, PS-06	Strip, Grit Blast, and Bond Coat		F-300DM Unknown Unknown	40005 Unknown Unknown	2004 Unknown Unknown	2/2017	N/A	Approximately 1,000 stripping tubes/yr and 1,250 new tubes/yr	Propane
PS-01	Thermal Spray		Unknown	Unknown	Unknown	2/2017	N/A	Approximately 1,750 tubes/yr	N/A
PS-07	Thermal Spray		Delta	761.014	2014	2021	N/A	Approximately 1,750 tubes/yr	N/A
TS	Thermal Spray (new)		Gas 66E Acetylene System	TBD	TBD	N/A	N/A	Three (3) systems; see Appendix C	Acetylene

NOTE: To add extra rows in Word, click anywhere in the last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

- Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.
- To determine whether a unit has been modified, evaluate if changes have been made to the unit that impact emissions or that trigger modification as defined in 20.11.41.7(U) NMAC. If not, put N/A.
- Basis for Equipment Process Rate or Capacity (e.g., Manufacturer's Data, Field Observation/Test, etc.) **Manufacturer's data**
Submit information for each unit as an attachment.

**Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)**

Emissions Control Equipment Table

Control Equipment Units listed on this Table should either match up to the same Unit number as listed on the Regulated Emission Sources, Controlled Emissions and Stack Parameters Tables (if the control equipment is integrated with the emission unit) or should have a distinct Control Equipment Unit Number and that number should then also be listed on the Stack Parameters Table.

Control Equipment Unit Number and Description		Controlling Emissions for Unit Number(s)	Manufacturer	Model # Serial #	Date Installed	Controlled Pollutant(s)	% Control Efficiency ¹	Method Used to Estimate Efficiency	Rated Process Rate or Capacity or Flow
Ex. 8b	Baghouse	3,4,5		C-12010 A16925	11/12/2019	PM ₁₀ , PM _{2.5}	99%	Manufacturer's Data	1,500 ACFM
BH-1	MikroPul Pulsaire Baghouse	AG1, AG2, IF1, IF2, CC3		80225-H 130S8-30	07/2007	PM	99.9% for particulates	Manufacturer's Data	7,987.98 ACFM
DC-01	Cartridge Dust Collector	PS-02, PS-03, PS-04, PS-05, PS-06		DFF3-12 11521950 -L1-1	02/2018	PM, HAP	99.95% for particulates	Manufacturer's Data	2,283.67 ACFM
DC-05	Cartridge Dust Collector	PS-01		DFF2-16 11518991 -L1-1	02/2018	PM, HAP	99.97% for particulates	Manufacturer's Data	9,566.72 ACFM
DC-06	Cartridge Dust Collector	PS-07		KPJF-1500/18-30 P070832-01	02/2018	PM, HAP	99.97% for particulates	Manufacturer's Data	2,247.22 ACFM
DC-11	Cartridge Dust Collector	FS-01 TS		DFO2-2 11518991 1-L8-1	07/2020	PM, HAP	99.99% for particulates	Manufacturer's Data	2,133.04 ACFM

NOTE: To add extra rows in Word, click anywhere in the last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

1. Basis for Control Equipment % Efficiency (e.g., Manufacturer's Data, Field Observation/Test, AP-42, etc.). **Manufacturer's data**
Submit information for each unit as an attachment.

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

Exempted Sources and Exempted Activities Table

See 20.11.41 NMAC for exemptions.

Unit Number and Description		Manufacturer	Model #	Serial #	Manufacture Date	Installation Date	Modification Date ¹	Process Rate or Capacity (Hp, kW, Btu, ft ³ , lbs, tons, yd ³ , etc.) ²	Fuel Type
BLD-01	Powder Blending	Custom	Custom	Custom	Unknown	2/2017	N/A	Approximately 800 tubes/yr	N/A
CAST-01, CAST-05	Vertical Casting	Custom	Custom	Custom	Unknown	2/2017	N/A	Approximately 500 tubes/yr	Electric Units
CAST-02	Cast Target Reconditioning	Generic	Unknown	Unknown	Unknown	2/2017	N/A	Approximately 500 tubes/yr	Propane
LT-14, LT-15, MLL-09	Finishing Process	Kingston EisenMach ACCU II	MKS-G 260 Unknown Unknown	Unknown Unknown Unknown	2008 Unknown Unknown	2/2017	N/A	Approximately 3300 finished targets/yr	N/A

NOTE: To add extra rows in Word, click anywhere in the last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

1. To determine whether a unit has been modified, evaluate if changes have been made to the unit that impact emissions or that trigger modification as defined in 20.11.41.7(U) NMAC. Also, consider if any changes that were made alter the status from exempt to non-exempt. If not, put N/A.
2. Basis for Equipment Process Rate or Capacity (e.g., Manufacturer's Data, Field Observation/Test, etc.) **Manufacturer's Data**
Submit information for each unit as an attachment.

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

Uncontrolled Emissions Table

(Process potential under physical/operational limitations during a 24 hr/day and 365 day/year = 8760 hrs)

Regulated Emission Units listed on this Table should match up to the same numbered line and Unit as listed on the Regulated Emissions and Controlled Tables. List total HAP values per Emission Unit if overall HAP total for the facility is ≥ 1 ton/yr.

Unit Number*	Nitrogen Oxides (NO _x)		Carbon Monoxide (CO)		Nonmethane Hydrocarbons/Volatile Organic Compounds (NMHC/VOCs)		Sulfur Dioxide (SO ₂)		Particulate Matter ≤ 10 Microns (PM ₁₀)		Particulate Matter ≤ 2.5 Microns (PM _{2.5})		Hazardous Air Pollutants (HAPs)		Method(s) used for Determination of Emissions (AP-42, Material Balance, Field Tests, etc.)
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	
CC3	-	-	-	-	-	-	-	-	0.00057	0.0025	0.00057	0.0025	-	-	AP-42 Table 12.9-2, Maximum zinc usage rate of 500 lb/yr
A1	0.39	1.71	0.33	1.43	0.021	0.094	0.0023	0.010	0.030	0.13	0.030	0.13	0.01	0.045	AP-42 Tables 1.4-1 & 1.4-2
IF1, IF2	0.0075	0.033	0.0063	0.028	0.00041	0.0018	0.000045	0.00020	0.00057	0.0025	0.00057	0.0025	0.0026	0.011	AP-42 Tables 1.4-1 & 1.4-2
EG1	1.38	0.14	22.04	2.20	0.53	0.053	0.00060	0.000060	0.020	0.0020	0.020	0.0020	0.074	0.01	Manufacturer's data, AP-42 Table 3.2-3
AG1	0.025	0.11	0.021	0.092	0.0014	0.0060	0.00015	0.00066	0.0019	0.0083	0.0019	0.0083	0.00064	0.0028	AP-42 Tables 1.4-1 & 1.4-2
AG2	0.025	0.11	0.021	0.092	0.0014	0.0060	0.00015	0.00066	0.0019	0.0083	0.0019	0.0083	0.00064	0.0028	AP-42 Tables 1.4-1 & 1.4-2
PS-02	-	-	-	-	-	-	-	-	0.049	0.22	0.049	0.22	0.0023	0.010	Material Balance
FS-01	-	-	-	-	-	-	-	-	0.77	3.38	0.77	3.38	-	-	Material Balance
PS-05	0.0016	0.0070	0.00092	0.0040	0.00012	0.00054	0.000061	0.00027	0.17	0.75	0.17	0.75	0.014	0.063	AP-42 Section 1.5, Table 1.5-1
PS-03, PS-04, PS-06	-	-	-	-	-	-	-	-	11.484	50.30	11.484	50.30	0.00033	0.0014	AP-42 Section 1.5, Table 1.5-1
PS-01	-	-	-	-	-	-	-	-	0.0098	0.043	0.0098	0.043	0.00035	0.0015	Material Balance
PS-07	-	-	-	-	-	-	-	-	0.0098	0.043	0.0098	0.043	0.00035	0.0015	Material Balance
TS	0.0038	0.0165	0.0181	0.0795	0.0013	0.0058	0.0107	0.0469	4.05	4.20	4.05	4.20	0.00000	0.00000	Manufacturer's Data, AP-42 Table 1.4-2, material balance
Totals of Uncontrolled Emissions	1.83	2.13	22.44	3.93	0.56	0.17	0.014	0.059	16.60	59.09	16.60	59.09	0.11	0.15	

*A permit is required and this application along with the additional checklist information requested on the Permit Application checklist must be provided if:

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

- (1) any one of these process units or combination of units, has an uncontrolled emission rate greater than or equal to ($\geq$) 10 lbs/hr or 25 tons/yr for any of the above pollutants, excluding HAPs, based on 8,760 hours of operation; or
- (2) any one of these process units or combination of units, has an uncontrolled emission rate $\geq$ 2 tons/yr for any single HAP or $\geq$ 5 tons/yr for any combination of HAPs based on 8,760 hours of operation; or
- (3) any one of these process units or combination of units, has an uncontrolled emission rate $\geq$ 5 tons/yr for lead (Pb) or any combination of lead and its compounds based on 8,760 hours of operation; or
- (4) any one of the process units or combination of units is subject to an Air Board or federal emission limit or standard.

* If all of these process units, individually and in combination, have an uncontrolled emission rate less than ($<$) 10 lbs/hr or 25 tons/yr for all of the above pollutants (based on 8,760 hours of operation), but $>$ 1 ton/yr for any of the above pollutants, then a source registration is required. A Registration is required, at minimum, for any amount of HAP emissions. Please complete the remainder of this form.

**Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)**

Controlled Emissions Table

(Based on current operations with emission controls OR requested operations with emission controls)

Regulated Emission Units listed on this Table should match up to the same numbered line and Unit as listed on the Regulated Emissions and Uncontrolled Tables. List total HAP values per Emission Unit if overall HAP total for the facility is ≥ 1 ton/yr.

Unit Number	Nitrogen Oxides (NO _x)		Carbon Monoxide (CO)		Nonmethane Hydrocarbons/Volatile Organic Compounds (NMHC/VOCs)		Sulfur Dioxide (SO ₂)		Particulate Matter ≤ 10 Microns (PM ₁₀)		Particulate Matter ≤ 2.5 Microns (PM _{2.5})		Hazardous Air Pollutants (HAPs)		Control Method	% Efficiency ¹
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
Example 1.	27.7	55.4	9.1	18.2	1.3	2.6	0.5	1.0	2.0	4.0	0.2	0.088	0.2	0.088	Operating Hours	N/A
CC3	-	-	-	-	-	-	-	-	0.0000057	0.0000025	0.00000057	0.0000025	-	-	PM controlled by BH-1	99.9%
A1	0.39	1.71	0.33	1.43	0.021	0.094	0.0023	0.010	0.03	0.13	0.03	0.13	0.010	0.045	N/A	N/A
IF1, IF2	0.0075	0.033	0.0063	0.028	0.00041	0.0018	0.000045	0.00020	0.00057	0.0025	0.00057	0.0025	0.0026	0.011	N/A	N/A
EG1	1.38	0.14	22.04	2.20	0.53	0.053	0.00060	0.000060	0.020	0.0020	0.020	0.0020	0.074	0.01	Operating Hours	N/A
AG1	0.025	0.11	0.021	0.092	0.0014	0.0060	0.00015	0.00066	0.0019	0.0083	0.0019	0.0083	0.00064	0.0028	N/A	N/A
AG2	0.025	0.11	0.021	0.092	0.0014	0.0060	0.00015	0.00066	0.0019	0.0083	0.0019	0.0083	0.00064	0.0028	N/A	N/A
PS-02	-	-	-	-	-	-	-	-	0.000025	0.00011	0.000025	0.00011	0.0000012	0.0000005	PM controlled by DC-01	99.95%
FS-01	-	-	-	-	-	-	-	-	0.000077	0.00034	0.000077	0.00034	-	-	PM controlled by DC-11	99.99%
PS-05	0.0016	0.0070	0.00092	0.0040	0.00012	0.00054	0.000061	0.00027	0.000086	0.00038	0.000086	0.00038	0.014	0.063	PM controlled by DC-01	99.95%
PS-03, PS-04, PS-06	-	-	-	-	-	-	-	-	0.0057	0.025	0.0057	0.025	0.00000016	0.00000071	PM controlled by DC-01	99.95%
PS-01	-	-	-	-	-	-	-	-	0.0098	0.043	0.0098	0.043	0.00035	0.0015	PM controlled by DC-05	99.97%
PS-07	-	-	-	-	-	-	-	-	0.0098	0.043	0.0098	0.043	0.00035	0.0015	PM controlled by DC-06	99.97%
TS	0.0038	0.0165	0.0181	0.0795	0.0013	0.0058	0.0107	0.0469	0.0011	0.0042	0.0011	0.0042	0.00000	0.00000	PM, HAP controlled by DC-11	99.99%
Totals of Controlled Emissions	1.83	2.13	22.44	3.93	0.56	0.17	0.014	0.059	0.081	0.27	0.081	0.27	0.10	0.14		

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

NOTE: To add extra rows in Word, click anywhere in the second-to-last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

1. Basis for Control Method % Efficiency (*e.g.*, Manufacturer's Data, Field Observation/Test, AP-42, etc.). **Manufacturer's data**
Submit information for each unit as an attachment.

**Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)**

Hazardous Air Pollutants (HAPs) Emissions Table

Report the Potential Emission Rate for each HAP from each source on the Regulated Emission Sources Table that emits a given HAP. Report individual HAPs with ≥ 1 ton/yr total emissions for the facility on this table. Otherwise, report total HAP emissions for each source that emits HAPs and report individual HAPs in the accompanying application package in association with emission calculations. If this application is for a Registration solely due to HAP emissions, report the largest HAP emissions on this table and the rest, if any, in the accompanying application package.

There are no individual HAPs with ≥ 1 ton/yr total emissions at this facility.

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

Purchased Hazardous Air Pollutant Table*

Product Categories (Coatings, Solvents, Thinners, etc.)	Hazardous Air Pollutant (HAP), or Volatile Hazardous Air Pollutant (VHAP) Primary To The Representative As Purchased Product	Chemical Abstract Service (CAS) Number of HAP or VHAP from Representative As Purchased Product	HAP or VHAP Concentration of Representative As Purchased Product (pounds/gallon, or %)	Concentration Determination (CPDS, SDS, etc.) ¹	Total Product Purchases For Category	(-)	Quantity of Product Recovered & Disposed For Category	(=)	Total Product Usage For Category
Example 1. Surface Coatings	Xylene	1330207	4.0 lbs/gal	SDS	lb/yr	(-)	lb/yr	(=)	lb/yr
					100 gal/yr		0 gal/yr		100 gal/yr
Example 2. Cleaning Solvents	Toluene	108883	70%	Product Label	lb/yr	(-)	lb/yr	(=)	lb/yr
					200 gal/yr		50 gal/yr		150 gal/yr
1. Total HAPs from Combustion	Total HAPS	N/A	N/A	GRI-HAPCalc 3.01	1156.3 lb/yr	(-)	0 lb/yr	(=)	1156.3 lb/yr
					gal/yr		gal/yr		gal/yr
2. Metallurgical Testing ¹	Isopropyl Alcohol	67-63-0	100%	N/A	lb/yr	(-)	lb/yr	(=)	lb/yr
					gal/yr		gal/yr		gal/yr
3. Metallurgical Testing ¹	Sulfuric Acid	7664-93-9	98%	N/A	lb/yr	(-)	lb/yr	(=)	lb/yr
					gal/yr		gal/yr		gal/yr
4. Metallurgical Testing ¹	Hydrogen Peroxide	7722-84-1	30%	N/A	lb/yr	(-)	lb/yr	(=)	lb/yr
					gal/yr		gal/yr		gal/yr
5. Metallurgical Testing ¹	Hydrochloric Acid	7647-01-0	35%	N/A	lb/yr	(-)	lb/yr	(=)	lb/yr
					gal/yr		gal/yr		gal/yr
6. Metallurgical Testing ¹	Nitric Acid	7697-37-2	80%	N/A	lb/yr	(-)	lb/yr	(=)	lb/yr
					gal/yr		gal/yr		gal/yr
7. Tube Polishing Equipment; Vee Blending; Strip, Grist Blast, and Bond Coat; and Thermal Spray Equipment	Nickel	7440-02-0	99.95%	Material Balance	10,220 lb/yr	(-)	10,214.89 lb/yr	(=)	2.51 lb/yr
					gal/yr		gal/yr		gal/yr
8. Form Spraying Equipment and Tube Polishing Equipment	Antimony	7440-36-0	100%	Material Balance	0.31 lb/yr	(-)	0 lb/yr	(=)	0.31 lb/yr
					gal/yr		gal/yr		gal/yr
TOTALS					lb/yr	(-)	lb/yr	(=)	lb/yr
					gal/yr		gal/yr		gal/yr

NOTE: Product purchases, recovery/disposal and usage should be converted to the units listed in this table. If units cannot be converted please contact the Air Quality Program prior to making changes to this table.

1. Submit, as an attachment, information on one (1) product from each Category listed above which best represents the average of all the products purchased in that Category. CPDS = Certified Product Data Sheet; SDS = Safety Data Sheet

¹ **Note:** These chemicals are used in small quantities for metallurgical testing under an exhaust hood (L1). The emissions from the testing operations are negligible due to the limited hours of testing and small quantities of reagent used.

*** A Registration is required, at minimum, for any amount of HAP or VHAP emission.**

Emissions from purchased HAP usage should be accounted for on previous tables as appropriate.

A permit may be required for these emissions if the source meets the requirements of 20.11.41 NMAC.

**Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)**

Material and Fuel Storage Table

(E.g., Tanks, barrels, silos, stockpiles, etc.)

Storage Equipment		Product Stored	Capacity (bbls, tons, gals, acres, etc.)	Above or Below Ground	Construction (Welded, riveted) & Color	Installation Date	Loading Rate ¹	Offloading Rate ¹	True Vapor Pressure	Control Method	Seal Type	% Eff. ²
1.	Cases	Nitric acid	42 lb/case	Above	Brown glass bottles	N/A	1,000 lbs/yr	1,000 lbs/yr	N/A	N/A	N/A	N/A
2.	Cases	Hydrochloric acid	40 lb/case	Above	Brown plastic bottles	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.	Barrels	Sodium bisulfate	400 lb	Above	Tan paper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4.	Bags	Copper filtercake	1900 lb	Above	White paper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5.	Box	Crucibles & Refractory	20 lb	Above	Tan cardboard	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6.	Drums	Slag	500 lb	Above	Black steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7.	Bags	Sodium hydroxide	50 lb	Above	White plastic	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8.	Bags	Refractory cement	50 lb	Above	Tan paper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9.	Bags	Cast set	50 lb	Above	Tan paper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10.	Bags	Silica sand	100 lb	Above	White paper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11.	Cylinder	Acetylene	145 cf	Above	Tan steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12.	Cylinder	Oxygen	281 cf	Above	Green steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13.	Tank	Nitrogen liquid	6000 gal	Above	Tan steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14.	Cylinder	Nitrogen	304 cf	Above	Orange steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15.	Cylinder	Helium	291 cf	Above	Blue steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16.	Cylinder	Argon	336 cf	Above	Brown steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17.	Drum	Baghouse dust	250 lb	Above	Black steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18.	Cases	Clay graphite crucibles	50 lb	Above	White paper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.	Cases	Graphite	50 lb	Above	White paper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20.	Cases	Mirachem 500 degreaser	40 lb/case	Above	Brown plastic bottles	N/A	N/A	N/A	N/A	N/A	N/A	N/A
21.	Cylinder	Hydrogen	291 cf	Above	Blue steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22.	Cases	Isopropyl alcohol	40 lb/case	Above	Brown plastic bottles	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

Storage Equipment		Product Stored	Capacity (bbls, tons, gals, acres, etc.)	Above or Below Ground	Construction (Welded, riveted) & Color	Installation Date	Loading Rate ¹	Offloading Rate ¹	True Vapor Pressure	Control Method	Seal Type	% Eff. ²
23.	Trailer	Hydrogen	4100 cf	Above	Tank	N/A	N/A	N/A	N/A	N/A	N/A	N/A
24.	Cases	Sulfuric acid	~60 lb/case	Above	Plastic bottles	N/A	N/A	N/A	N/A	N/A	N/A	N/A
25.	Cases	Hydrogen peroxide	~45 lb/case	Above	Plastic bottles	N/A	N/A	N/A	N/A	N/A	N/A	N/A
26.	Drum	Proprietary Metal Product Powder	<55 gal	Above	Black steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
27.	Cylinder	Helium	44 cu ft	Above	Blue steel	2014	N/A	N/A	2400 PSI	N/A	N/A	N/A
28.	Tank	Argon	690 gal	Above	Brown steel	2014	N/A	N/A	175 PSIG	N/A	N/A	N/A
29.	Case	Hydrogen	12-300 lb cylinders	Above	Blue steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
30.	Cylinder	CO	Unknown	Above	Green steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1. Basis for Loading/Offloading Rate (e.g., Manufacturer's Data, Field Observation/Test, etc.). N/A
Submit information for each unit as an attachment.
2. Basis for Control Method % Efficiency (e.g., Manufacturer's Data, Field Observation/Test, AP-42, etc.). N/A
Submit information for each unit as an attachment.

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

Stack Parameters Table

If any equipment from the Regulated Emission Sources Table is also listed in this Stack Table, use the same numbered line for the emission unit on both tables to show the association between the Process Equipment and its stack.

Unit Number and Description		Pollutant (CO, NO _x , PM ₁₀ , etc.)	UTM Easting (m)	UTM Northing (m)	Stack Height (ft)	Stack Exit Temp. (°F)	Stack Velocity (fps)	Stack Flow Rate (acfm)	Stack Inside Diameter (ft)	Stack Type
1. AG1	Melting Furnace	NO _x , CO, VOC, SO ₂ , PM, HAP	353859.2	3890794.12	37.73	150.53	61.02	7987.98	1.67	Vertical, capped
2. AG2	Melting Furnace	NO _x , CO, VOC, SO ₂ , PM, HAP	353859.2	3890794.12	37.73	150.53	61.02	7987.98	1.67	Vertical, capped
3. IF1	Induction Furnace	NO _x , CO, VOC, SO ₂ , PM, HAP	353859.2	3890794.12	37.73	150.53	61.02	7987.98	1.67	Vertical, capped
4. IF2	Induction Furnace	NO _x , CO, VOC, SO ₂ , PM, HAP	353859.2	3890794.12	37.73	150.53	61.02	7987.98	1.67	Vertical, capped
5. CC3	Continuous Casting Furnace	PM	353859.2	3890794.12	37.73	150.53	61.02	7987.98	1.67	Vertical, capped
6. A1	Belt Annealing Furnace	NO _x , CO, VOC, SO ₂ , PM, HAP	353864.64	3890776.15	37.99	299.93	39.37	16682.85	3.00	Vertical, capped
7. EG1	Emergency Generator	NO _x , CO, VOC, SO ₂ , PM, HAP	353862.60	3890800.15	12.01	899.33	132.55	970	0.39	Vertical
8. PS-02	Finishing Process	PM, HAP	353860.06	3890839.47	8.99	Ambient	12.14	2283.67	2.00	Vertical
9. FS-01	Form Spray Process	PM, HAP	353894.07	3890844.34	6.59	Ambient	42.65	2133.04	1.03	Vertical, capped
10. PS-05	Strip, Grit Blast, and Bond Coat	NO _x , CO, VOC, SO ₂ , PM, HAP	353860.06	3890839.47	8.99	Ambient	12.14	2283.67	2.00	Vertical
11. PS-03, PS-04, PS-06	Strip, Grit Blast, and Bond Coat	PM, HAP	353860.06	3890839.47	8.99	Ambient	12.14	2283.67	2.00	Vertical
12. PS-01	Thermal Spray	PM, HAP	353859.85	3890842.61	7.15	85.73	50.85	9566.72	2.00	Vertical
13. PS-07	Thermal Spray	PM, HAP	353860.01	3890835.99	37.73	Ambient	10.17	2247.22	2.17	Vertical, rain cap

NOTE: To add extra rows in Word, click anywhere in the last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

Certification

NOTICE REGARDING SCOPE OF A PERMIT: The Environmental Health Department's issuance of an air quality permit only authorizes the use of the specified equipment pursuant to the air quality control laws, regulations and conditions. Permits relate to air quality control only and are issued for the sole purpose of regulating the emission of air contaminants from said equipment. Air quality permits are not a general authorization for the location, construction and/or operation of a facility, nor does a permit authorize any particular land use or other form of land entitlement. It is the applicant's/permittee's responsibility to obtain all other necessary permits from the appropriate agencies, such as the City of Albuquerque Planning Department or Bernalillo County Department of Planning and Development Services, including but not limited to site plan approvals, building permits, fire department approvals and the like, as may be required by law for the location, construction and/or operation of a facility. For more information, please visit the City of Albuquerque Planning Department website at <https://www.cabq.gov/planning> and the Bernalillo County Department of Planning and Development Services website at <https://www.bernco.gov/planning>.

NOTICE REGARDING ACCURACY OF INFORMATION AND DATA SUBMITTED: Any misrepresentation of a material fact in this application and its attachments is cause for denial of a permit or revocation of part or all of the resulting registration or permit, and revocation of a permit for cause may limit the permittee's ability to obtain any subsequent air quality permit for ten (10) years. Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained under the Air Quality Control Act, NMSA 1978 §§ 74-2-1 to 74-2-17, is guilty of a misdemeanor and shall, upon conviction, be punished by a fine of not more than ten thousand dollars (\$10,000) per day per violation or by imprisonment for not more than twelve months, or by both.

I, the undersigned, hereby certify that I have knowledge of the information and data represented and submitted in this application and that the same is true and accurate, including the information and data in any and all attachments, including without limitation associated forms, materials, drawings, specifications, and other data. I also certify that the information represented gives a true and complete portrayal of the existing, modified existing, or planned new stationary source with respect to air pollution sources and control equipment. I understand that there may be significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. I also understand that the person who has applied for or has been issued an air quality permit by the Department is an obligatory party to a permit appeal filed pursuant to 20.11.81 NMAC. Further, I certify that I am qualified and authorized to file this application, to certify the truth and accuracy of the information herein, and bind the source. Moreover, I covenant and agree to comply with any requests by the Department for additional information necessary for the Department to evaluate or make a final decision regarding the application.

Signed this 26 day of August, 2026

Sean Newcomb

Print Name

General Manager

Print Title



Signature

Role: ☐ Owner ☒ Operator

☐ Other Authorized Representative

ATC Revision for Permit No. 1962-M1-1TR

Materion Advanced Materials Technologies and Services Corporation - North Facility



Electrical Induction Casting Furnace

Emission Point: BH1
Process Units: CC3
Unit Type: Electrical Induction Casting Furnaces

Inputs:

Emission Factor¹: 20 lb/ton
Zinc Usage: 500 lb/yr
Control Efficiency²: 99.9%

	PM ³	Units	Notes
Uncontrolled Emissions	0.0025	tpy	Emission Factor (lb/ton) * Zinc Usage lb/yr / 2000 lb/ton
	5.71E-04	lb/hr	Annual Emissions (tpy) / 8760 hr/yr * 2000 lb/ton
Controlled Emissions	2.50E-06	tpy	Uncontrolled Annual Emissions (tpy) * (1 - Control Efficiency)
	5.71E-07	lb/hr	Uncontrolled Hourly Emissions (tpy) * (1 - Control Efficiency)

Notes:

- ¹ AP-42 Table 12.9-2: Uncontrolled PM emission factor for electric induction furnaces for Brass and Copper (SCC 3-04-002-24) This emission factor was used since brass is a zinc containing alloy.
- ² A nominal baghouse control efficiency of 99.9 % is assumed.
- ³ TSP, PM₁₀ and PM_{2.5} are all assumed to be PM (Total) as a conservative measure. Particulates are emitted only when [REDACTED] is alloyed with zinc. (See Section 2, [REDACTED] Products)

ATC Revision for Permit No. 1962-M1-1TR

Materion Advanced Materials Technologies and Services Corporation - North Facility



Belt Annealing Furnace

Emission Point; A1
Unit Type: Natural Gas-Fired Belt Annealing Furnace

Inputs:

Rated Capacity 3,900 MBtu/hr
Fuel Heat Value 1,000 Btu/scf
Hours of Operation 8,760 hr/yr

	NO _x	CO	VOC	SO ₂	PM ¹	HAP ²	Units	Notes
Emission Factors	100	84	5.5	0.6	7.6	-	lb/MMscf	AP-42 Tables 1.4-1 & 2
Hourly Emissions	0.39	0.33	0.021	0.0023	0.030	0.010	lb/hr	Annual Emissions * 8760 hr/yr * 2000 lb/ton
Annual Emissions	1.71	1.43	0.094	0.010	0.13	0.045	tpy	Rating * 1/hhv * Hrs * EF * 1 ton / 2000 lb

Notes:

- 1 TSP, PM₁₀ and PM_{2.5} are assumed to be PM (Total) as a conservative measure.
- 2 Total HAP from GRI HAPCalc 3.01.

ATC Revision for Permit No. 1962-M1-1TR**Materion Advanced Materials Technologies and Services Corporation - North Facility****Induction Furnace**

Process Unit: IF1 or IF2 (backup)

Unit Type: Induction Furnace

Inputs:

Fuel Heat Rate: 75 Mbtu/hr

Fuel Heat Value: 1000 Btu/scf

Total Fuel Usage: 75 scf/hr

7.5E-05 MMscf/hr

Annual Fuel Usage: 0.66 MMscf/yr

Hours of Operation: 8,760 hours

Notes:

Heat Rate (MBtu/hr) * 1000 / Heat Value (Btu/scf)

Fuel Usage (MMscf/hr) * 8760 hr/yr

	NO _x	CO	VOC	SO ₂	PM ¹	HAPs ²	Units	Notes
Emission Factors	100	84	5.5	0.6	7.6		lb/MMscf	AP-42 Table 1.4-1 & 2
Hourly Emissions	0.0075	0.0063	4.1E-04	4.5E-05	5.7E-04	0.0026	lb/hr	EF (lb/MMscf) * Fuel Usage (MMscf/hr)
Annual Emissions	0.033	0.028	0.0018	1.97E-04	0.0025	0.011	tpy	Hourly Emissions (lb/hr) * 8760 hr/yr / 2000 (lb/ton)

Notes:

1 TSP, PM10 and PM2.5 are assumed to be PM (Total), as a conservative measure.

2 Total HAPs calculated using GRI-HAPCalc 3.01 using 1 MMBtu/hr as a conservative approach.

ATC Revision for Permit No. 1962-M1-1TR**Materion Advanced Materials Technologies and Services Corporation - North Facility****Emergency Generator**

Emission Unit: EG1
Source Description: Natural Gas Emergency Generator

Engine Rating

150 hp Baldor Specifications
112 kW Baldor Specifications

Fuel Consumption

Hours of Operation: 200 hr/yr
Fuel Heat Value: 1000 Btu/scf
Heat input: 1.012 MMBtu/hr
Annual Fuel Usage: 0.20 MMscf/yr

Emission Calculations

	NO _x	CO	VOC	SO ₂	PM ¹	HAP ³	Units	Notes
Emission Factors				0.000588	0.01941		lb/MMBtu	AP-42 Table 3.2-3 (7/00)
	624	10000	240				g/hr	Manufacturer Data ²
Hourly Emissions	1.38	22.04	0.53	5.95E-04	0.020	0.074	lb/hr	
Annual Emissions	0.14	2.20	0.053	5.95E-05	0.0020	0.0074	tpy	

Notes:

¹ TSP, PM₁₀ and PM_{2.5} are assumed to be PM (Total), as a conservative measure.

² Provided by Baldor; Conservatively calculated using the maximum value of ranges reported.

³ Total HAPs from GRI HAPCalc 3.01

ATC Revision for Permit No. 1962-M1-1TR**Materion Advanced Materials Technologies and Services Corporation - North Facility****Melting Furnaces**

Emission Points: AG1, AG2
Unit Type: Natural Gas-Fired Melting Furnaces

Inputs

Fuel Heating Rate: 250 MBtu/hr
Hours of Operation: 8760 hr/yr
Fuel Heat Value: 1000 Btu/scf

	NO _x	CO	VOC	SO ₂	TSP ¹	HAP ²	Units	Notes
Emissions Factors	100	84	5.5	0.6	7.6		lb/MMscf	AP-42 Table 1.4-1 & 2
Hourly Emissions	0.025	0.021	0.0014	0.00015	0.0019	6.39E-04	lb/hr	Heating Rate (Mbtu/hr) / Heat Value (Btu/scf) * EF (lb/ MMscf)
Annual Emissions	0.11	0.092	0.0060	0.00066	0.0083	0.0028	tpy	Hourly Emissions (lb/hr) * Hours of Operation (hr) / 2000 (lb/ton)

Notes:

- 1 TSP, PM₁₀ and PM_{2.5} are assumed to be PM (Total), as a conservative measure.
- 2 Total HAP emissions are reference from GRI HAPCalc 3.01.

ATC Revision for Permit No. 1962-M1-1TR**Materion Advanced Materials Technologies and Services Corporation - North Facility****Form Spray Equipment**

Emission Point: DC-11
 Process Units: FS-01
 Unit Type: Form Spray Equipment

Dust Collector Control Efficiency: 99.99%

Material	Total ¹ (lb/yr)	Material Component	Component Mass percent (%)	Incoming Material (lb/yr)	Sprayed Target Product (lb/yr)	Deposited in Chamber (lb/yr)	Exhaust from DC-11 (lb/yr) ³	Captured Solids (lb/yr)
ZnSn ¹	114,388	Zn	52%	59,481.76	47,585.20	10,706.80	0.12	1189.2
		Sn	48%	54,906.24	43,924.80	9,883.20	0.11	1097.8
ZnSnSb ²	38,129	Zn	50%	19,064.50	15,251.50	3,431.50	0.038	3431.5
		Sn	48%	18,301.92	14,641.44	3,294.24	0.037	3294.2
		Sb	2%	762.58	610.06	137.26	0.0015	137.3
In	92,568	In	100%	92,568.00	74,054.00	16,662.00	0.19	1850.0
Sn	92,568	Sn	100%	92,568.00	74,054.00	16,662.00	0.19	1850.0
Argon	5,719	Argon	100%	5,719.00	-	-	5719.00	-
MAPP Gas	88.1	MAPP Gas	100%	88.13	-	-	88.13	-

Uncontrolled Emissions								
	Ar	Zn	Sn	Sb	In	CO ₂	Total PM ⁴	Units
Hourly Emissions	6.5E-01	1.8E-01	3.8E-01	1.7E-03	2.1E-01	1.0E-02	7.7E-01	lb/hr
Annual Emissions	2.9E+00	7.9E-01	1.7E+00	7.6E-03	9.3E-01	4.4E-02	3.4E+00	tons

Controlled Emissions								
	Ar	Zn	Sn	Sb	In	CO ₂	Total PM ⁴	Units
Hourly Emissions	6.5E-01	1.8E-05	3.8E-05	1.7E-07	2.1E-05	1.0E-02	7.7E-05	lb/hr
Annual Emissions	2.9E+00	7.9E-05	1.7E-04	7.6E-07	9.3E-05	4.4E-02	3.4E-04	tons

Notes:

- 1 Material usages are based on material purchases at other like-kine Materion Facilities.
- 2 Based on chemical compositions provided by Materion ZnSn is 52% Zn and 48% Sn.
- 3 Based on chemical compositions provided by Materion ZnSnSb is 50% Zn, 48% Sn, 2% Sb.
- 4 Emissions are routed to Dust Collector DC-11 which has a control efficiency of 99.99%.
- 5 TSP, PM₁₀ and PM_{2.5} are assumed to be PM (Total), as a conservative measure.

Thermal Spray Equipment

Emission Point: DC-05 & DC-06
 Process Units: PS-01 & PS-07
 Unit Type: Thermal Spray Equipment

Materials Processed¹

Incoming Material			Sprayed Target Material (Product)			Captured Solid Material (Solid Waste)		
SiAl	123,975	lb/yr	SiAl	53,309	lb/yr	SiAl	70,630	lb/yr
TiO ₂	23,858	lb/yr	TiO ₂	10,259	lb/yr	TiO ₂	13,592	lb/yr
SiB	18,315	lb/yr	SiB	7,876	lb/yr	SiB	10,434	lb/yr
NiW ²	21,291	lb/yr	NiW ²	9,155	lb/yr	NiW ²	12,130	lb/yr
W	36,068	lb/yr	W	15,509	lb/yr	W	20,549	lb/yr
Zn	64,798	lb/yr	Zn	27,863	lb/yr	Zn	36,916	lb/yr
Ar	22,351	lb/yr	Ar	0	lb/yr	Ar	0	lb/yr

Emission Rates per Unit^{3,4,5}

	SiAl	TiO ₂	SiB	Ni	W	Zn	Ar	Total PM ⁵	Units
Hourly Emissions	4.1E-03	8.0E-04	5.7E-04	3.5E-04	1.8E-03	2.2E-03	2.6E+00	9.8E-03	lb/hr
Annual Emissions	1.8E-02	3.5E-03	2.5E-03	1.5E-03	8.0E-03	9.5E-03	1.1E+01	4.3E-02	tons/yr

Notes:

- 1 Estimated material usages were provided by Materion based on existing operations at other facilities outside of NM.
- 2 Based on chemical compositions provided by Materion NiW is 51% Ni and 49% W.
- 3 Emission rates were determined by comparing the incoming materials to the materials collected after diamond belt polishing and the dust collector.
- 4 PS-01 and PS-07 emissions are routed to Dust Collectors DC-05 and DC-06.
- 5 TSP, PM₁₀ and PM_{2.5} are assumed to be PM (Total), as a conservative measure.



Tube Polishing Equipment

Emission Point: DC-02
 Process Unit: PS-02
 Unit Type: Tube Polishing Equipment

Diamond Belt
 Polisher Dust 0.50%
 Machining Chips 10.0%
 Dust Collector
 Control Efficiency 99.95%

	Material	Total Usage (lb/yr)	Material Component	% of Material	Incoming Material (lb/yr)	Chips (lb/yr)	Lathe Dust
Soft Alloys	ZnSn	91,510	Zn	90%	82,359.00	8,235.90	41.2
			Sn	10%	9,151.00	915.10	4.6
	ZnSnSb	30,503	Zn	90%	27,452.70	2,745.27	13.7
			Sn	8%	2,440.24	244.02	1.2
			Sb	2%	610.06	61.01	0.3
	In	74,054	In	100%	74,054.00	7,405.40	37.0
	Sn	160,010	Sn	100%	160,010.00	16,001.00	80.0
	InSn	57,304	In	90%	51,573.60	5,157.36	25.8
			Sn	10%	5,730.40	573.04	2.9
	Zn	27,863	Zn	100%	27,863.00	2,786.30	13.9
	ZnAl	99,180	Zn	98%	97,196.40	9,719.64	48.6
			Al	2%	1,983.60	198.36	1.0

	Material	Total Usage (lb/yr)	Material Component	% of Material	Incoming Material (lb/yr)	Chips (lb/yr)	Diamond Belt Polish (lb/yr)	DC-02 Exhaust (lb/yr)	Captured Dust (lb/hr)
Hard Alloys	SiAl	53,309	SiAl	100%	53,309.00	5,330.90	239.89	0.120	239.77
		10,259	TiO2	100%	10,259.00	1,025.90	46.17	0.023	46.14
	SiB	7,876	SiB	100%	7,876.00	787.60	35.44	0.018	35.42
	NiW	9,155	Ni	49%	4,485.95	448.60	20.19	0.010	20.18
			W	51%	4,669.05	466.91	21.01	0.011	21.00
	W	15,509	W	100%	15,509.00	1,550.90	69.79	0.035	69.76

Uncontrolled Emissions												
	SiAl	TiO2	SiB	Ni	W	Zn	Sn	In	Sb	Al	Total PM ³	Units
Hourly Emissions	2.7E-02	5.3E-03	4.0E-03	2.3E-03	1.0E-02	-	-	-	-	-	4.9E-02	lb/hr
Yearly Emissions	1.2E-01	2.3E-02	1.8E-02	1.0E-02	4.5E-02	-	-	-	-	-	2.2E-01	tons/yr

Maximum Emissions ^{1,2}												
	SiAl	TiO2	SiB	Ni	W	Zn	Sn	In	Sb	Al	Total PM ³	Units
Hourly Emissions	1.4E-05	2.6E-06	2.0E-06	1.2E-06	5.2E-06	-	-	-	-	-	2.5E-05	lb/hr
Yearly Emissions	6.0E-05	1.2E-05	8.9E-06	5.0E-06	2.3E-05	-	-	-	-	-	1.1E-04	tons/yr

Notes:

- Unit PS-02 accounts for emissions from hard alloys.
- All emissions are routed to a dust collector (Unit DC-02), which has a control efficiency of 99.95%.
- TSP, PM₁₀ and PM_{2.5} are assumed to be PM (Total), as a conservative measure.



TMD Strip, Grit Blast, and Bond Coat

Emission Point: DC-01
 Process Units: PS-03, PS-04, PS-05, PS-06
 Unit Type: TMD Strip, Grit Blast, and Bond Coat

Material and Fuel Throughputs	
Stripping Tubes	1000 per year
New Tubes	1250 per year
Total Fuel Usage	4500 lb/yr
	1071.4 gal/yr
	0.122 gal/hr
	0.011 MMBtu/hr

Materials Processed ²	
Al Grit	67,500 lb/yr
NiAl Wire	7,439 lb/yr
Cu Wire	661 lb/yr
SiAl	26,654 lb/yr
Argon	3,719 lb/yr

PS-05 Emission Factors ¹	
NO _x	13.0 lb/10 ³ gal
CO	7.5 lb/10 ³ gal
VOC	1.0 lb/10 ³ gal
SO ₂	0.50 lb/10 ³ gal
TSP	0.70 lb/10 ³ gal

Materials Recovered from Grit Blast and Stripping	
NiAl ³	3,719 lb/yr
Cu	331 lb/yr

Dust Collector Control Efficiency ⁴ :	99.95%
--	--------

Captured Dust	
Alumina	67,466 lb/yr
NiAl	3,717 lb/yr
Cu	330 lb/yr
SiAl	26,641 lb/yr

Uncontrolled Emissions										
	Process Units	NO _x	CO	VOC	SO ₂	PM	Ni	PM ₁₀ ⁵	HAPs ^{6,7}	Units
Hourly Emissions	PS-05	1.6E-03	9.2E-04	1.2E-04	6.1E-05	1.7E-01	-	1.7E-01	1.4E-02	lb/hr
	PS-03, PS-04, PS-06	-	-	-	-	1.1E+01	3.3E-04	1.1E+01	3.3E-04	lb/hr
Annual Emissions	PS-05	7.0E-03	4.0E-03	5.4E-04	2.7E-04	7.5E-01	-	7.5E-01	6.3E-02	ton/yr
	PS-03, PS-04, PS-06	-	-	-	-	5.0E+01	1.4E-03	5.0E+01	1.4E-03	ton/yr

Controlled Emissions										
	Process Units	NO _x	CO	VOC	SO ₂	PM	Ni	PM ₁₀ ⁵	HAPs ⁶	Units
Hourly Emissions	PS-05	1.6E-03	9.2E-04	1.2E-04	6.1E-05	8.6E-05	-	8.6E-05	1.4E-02	lb/hr
	PS-03, PS-04, PS-06	-	-	-	-	5.7E-03	1.6E-07	5.7E-03	1.6E-07	lb/hr
Annual Emissions	PS-05	7.0E-03	4.0E-03	5.4E-04	2.7E-04	3.8E-04	-	3.8E-04	6.3E-02	ton/yr
	PS-03, PS-04, PS-06	-	-	-	-	2.5E-02	7.1E-07	2.5E-02	7.1E-07	ton/yr

Notes:

- 1 Emission factors for combustion associated with Unit PS-05 are from AP-42 Section 1.5, Table 1.5-1 for propane.
- 2 Estimated material usages were provided by Materion based on existing operations at other facilities outside of NM.
- 3 Based on chemical compositions provided by Materion NiAl is 95% Ni and 5% Al.
- 4 Emissions from all units are routed to dust collector DC-01
- 5 TSP, PM₁₀ and PM_{2.5} are assumed to be PM (Total), as a conservative measure.
- 6 HAP emissions from PS-05 combustion were calculated using GRI-HAPCalc 3.01.
- 7 HAP emissions from PS-03, PS-04, and PS-06 are from PM emission generated from nickel.

Reliable Silver Corporation
Albuquerque Site
Spray Emissions Wire Thermal Spray Operations

Spray Emissions:			
Consumption Rate Per Applicator:	9	lb/hr	Applicator specification
Total Applicators in Operation	3	#	
Total Consumption Rate (lb/hr)	27	lb/hr	
Application Percentage:	85%	weight %	RSC input
Filtration System Control Efficiency:	99.996%	weight %	Particulate filter specifications
Used Per Tube	350	lbs/tube	per meeting on 8/18/2025: RSC input
Tubes Produced Per Year	160	tubes/year	per meeting on 8/18/2025: 80 tubes per year is 2026 target, this calculation adds a 100% margin
Used Per Year	56,000	lbs/year	

Constituent	Weight Percent (%) ¹	Mass of Dust Produced (lb/hr)	Mass of Dust Emitted Post Control (lb/hr)	Mass of Dust Produced (tpy)	Mass of Dust Emitted Post Control (tpy)
	99.995	4.05	1.62E-04	4.20E+00	1.68E-04
Aluminum	0.0001	0.00	1.62E-10	4.20E-06	1.68E-10
Bismuth	0.0001	0.00	1.62E-10	4.20E-06	1.68E-10
Cadmium	0.0001	0.00	1.62E-10	4.20E-06	1.68E-10
Copper	0.003	0.00	4.86E-09	1.26E-04	5.04E-09
Iron	0.0001	0.00	1.62E-10	4.20E-06	1.68E-10
Nickel	0.0001	0.00	1.62E-10	4.20E-06	1.68E-10
Lead	0.0001	0.00	1.62E-10	4.20E-06	1.68E-10
Antimony	0.0001	0.00	1.62E-10	4.20E-06	1.68E-10
Silicon	0.0005	0.00	8.10E-10	2.10E-05	8.40E-10
Zinc	0.0003	0.00	4.86E-10	1.26E-05	5.04E-10
Total PM ₁₀ /PM _{2.5}			1.62E-04		1.68E-04
Total HAP			6.48E-10		6.72E-10

Notes:
1. material properties determined via ASTM

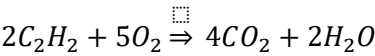
Reliable Silver Corporation

Albuquerque Site

Combustion Wire Thermal Spray Operations

Acetylene Combustion Emissions:

Stoichiometry:



Flow rate of acetylene to burner	120	ft ³ /hr	From RSC
Stoichiometric flow rate of oxygen to burner	300	ft ³ /hr	Calculated
Stoichiometric flow rate of carbon dioxide out of burner	240	ft ³ /hr	Calculated
Stoichiometric flow rate of moisture out of burner	120	ft ³ /hr	Calculated
Exhaust flow rate	360	ft ³ /hr	Calculated
Exhaust Molecular Weight	35.3	lb/lbmol	Calculated
Mass Flow of exhaust	35.4	lb/hr (at STP, 0 C and 14.7 psia)	Calculated
Hours of Operation per year	8,760	hours/year	Assumed
Hydrogen sulfide (H ₂ S) content of acetylene	500	ppm _v	Grade B Acetylene Gas Manufacturer Specification
Flow of H ₂ S to burner	0.06	ft ³ /hr	Calculated
Flow of SO ₂ released	0.06	ft ³ /hr	Calculated
Molecular Weight of SO ₂	64.1	lb/lbmol	Literature value
Mass of SO ₂ released	0.01	lb/hr (at STP, 0 C and 14.7 psia)	

Constituent	Emission Factor (ppm _w) ¹	AP-42 Chapter 1 Table 1.4-2 Emission Factors (lb/10 ⁶ SCF)	Emission Rate (lb/hr)	Emission Rate (tpy)
CO	512	-	0.02	0.08
NO _x	106	-	3.76E-03	0.02
SO ₂	-	-	0.01	0.05
VOC	-	11.00	1.32E-03	0.01
PM ₁₀	-	7.60	9.12E-04	0.004
PM _{2.5}	-	7.60	9.12E-04	0.004

Notes:

1. Emission factors for CO and NO_x obtained from "Research on Environmental Impact Assessment of Flame Oxyacetylene Welding Processes" to best quantify similar combustion emissions from similar fuel source. Otherwise, VOC, PM₁₀, and PM_{2.5} emissions are assumed to be similar to natural gas combustion emission factors presented in AP-42 Chapter 1.4 Table 1.4-2.

2. Maximum hydrogen sulfide (H₂S) content of Grade B acetylene gas from manufacturer specifiication. It is assumed that 100% of H₂S is converted to SO₂

3. Assuming ideal gas behavior, complete combustion, stoichiometric oxygen flow, and no excess air.

Reliable Silver Corporation
Albuquerque Site
Combustion Wire Thermal Spray Operations

Emissions Summary Table - Controlled

Constituent	Spray Emissions		Combustion Emissions		Total Emissions	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CO	-	-	1.81E-02	7.95E-02	1.81E-02	7.95E-02
NO _x	-	-	3.76E-03	1.65E-02	3.76E-03	1.65E-02
SO ₂	-	-	1.07E-02	4.69E-02	1.07E-02	4.69E-02
VOC	-	-	1.32E-03	5.78E-03	1.32E-03	5.78E-03
PM ₁₀	1.62E-04	1.68E-04	9.12E-04	3.99E-03	1.07E-03	4.16E-03
PM _{2.5}	1.62E-04	1.68E-04	9.12E-04	3.99E-03	1.07E-03	4.16E-03
HAPs	6.48E-10	6.72E-10	-	-	6.48E-10	6.72E-10

Emissions Summary Table - Uncontrolled

Constituent	Spray Emissions		Combustion Emissions		Total Emissions	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CO	-	-	1.81E-02	7.95E-02	1.81E-02	7.95E-02
NO _x	-	-	3.76E-03	1.65E-02	3.76E-03	1.65E-02
SO ₂	-	-	1.07E-02	4.69E-02	1.07E-02	4.69E-02
VOC	-	-	1.32E-03	5.78E-03	1.32E-03	5.78E-03
PM ₁₀	4.05E+00	4.20E+00	9.12E-04	3.99E-03	4.05	4.20
PM _{2.5}	4.05E+00	4.20E+00	9.12E-04	3.99E-03	4.05	4.20
HAPs	1.62E-05	1.68E-05	-	-	1.62E-05	1.68E-05

APPENDIX D

Application Contents



City of Albuquerque Environmental Health Department Air Quality Program



Construction Permit (20.11.41 NMAC) Application Checklist

This checklist must be returned with the application

Any person seeking a new air quality permit, a permit modification, or an emergency permit under 20.11.41 NMAC (Construction Permits) shall do so by filing a written application with the Albuquerque-Bernalillo County Joint Air Quality Program, which administers and enforces local air quality laws for the City of Albuquerque ("City") and Bernalillo County ("County"), on behalf of the City Environmental Health Department ("Department").

The Department will rule an application administratively incomplete if it is missing or has incorrect information. The Department may require additional information that is necessary to make a thorough review of an application, including but not limited to technical clarifications, emission calculations, emission factor usage, additional application review fees if any are required by 20.11.2 NMAC, and new or additional air dispersion modeling.

If the Department has ruled an application administratively incomplete three (3) times, the Department will deny the permit application. Any fees submitted for processing an application that has been denied will not be refunded. If the Department denies an application, a person may submit a new application and the fee required for a new application. The applicant has the burden of demonstrating that a permit should be issued.

The following are the minimum elements that shall be included in the permit application before the Department can determine whether an application is administratively complete and ready for technical review. It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.

At all times before the Department has made a final decision regarding the application, an applicant has a duty to promptly supplement and correct information the applicant has submitted in an application to the Department. The applicant's duty to supplement and correct the application includes but is not limited to relevant information acquired after the applicant has submitted the application and additional information the applicant otherwise determines is relevant to the application and the Department's review and decision. While the Department is processing an application, regardless of whether the Department has determined the application is administratively complete, if the Department determines that additional information is necessary to evaluate or make a final decision regarding the application, the Department may request additional information and the applicant shall provide the requested additional information.

NOTICE REGARDING PERMIT APPEALS: A person who has applied for or has been issued an air quality permit by the Department shall be an obligatory party to a permit appeal filed pursuant to 20.11.81 NMAC.

NOTICE REGARDING SCOPE OF A PERMIT: The Department's issuance of an air quality permit only authorizes the use of the specified equipment pursuant to the air quality control laws, regulations and conditions. Permits relate to air quality control only and are issued for the sole purpose of regulating the emission of air contaminants from said equipment. Air quality permits are not a general authorization for the location, construction and/or operation of a facility, nor does a permit authorize any particular land use or other form of land entitlement. It is the applicant's/permittee's responsibility to obtain all other necessary permits from the appropriate agencies, such as the City Planning Department or County Department of Planning and Development Services, including but not limited to site plan approvals, building permits, fire department approvals and the like, as may be required by law for the location, construction and/or operation of a facility. For more information, please visit the City Planning Department website at <https://www.cabq.gov/planning> and the County Department of Planning and Development Services website at <https://www.bernco.gov/planning>.

The Applicant shall:

20.11.41.13(A) NMAC – Pre-Application Requirements:

Item	Completed	N/A ¹	Waived ²
(1) Request a pre-application meeting with the Department using the pre-application meeting request form. Include a copy of the request form submitted to the Department.	☒	☐	☐
(2) Attend the pre-application meeting. Date of pre-application meeting: September 30, 2025	☒	☐	☐
Pre-application meeting agenda and public notice sign checklists included with application?	☒	☐	☐

1. Not Applicable
2. It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.

20.11.41.13(B) NMAC – Applicant’s Public Notice Requirements:

Item	Included in Application	N/A ¹	Waived ²
(1) Provide public notice in accordance with the regulation, including by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located. The public notice shall include all information required by Subsection C of 20.11.41.13 NMAC.	☒	☐	☐
• Contact list of representative(s) of recognized neighborhood associations and recognized coalitions cannot be more than three months old from the application submittal date. • Include memo with contact list provided by Department in application submittal.	☒	☐	☐
• Provide notice using the Notice of Intent to Construct form and Applicant Notice Cover Letter.	☒	☐	☐
(2) In accordance with the regulation, post and maintain a weather-proof sign provided by the Department in a visible location. The applicant shall keep the sign posted until the Department takes final action on the permit application. Include pictures in application showing location of sign and close-up showing information on sign.	☒	☐	☐
Documentary proof of all public notice requirements listed above and required by 20.11.41.13(E)(15) included with application?	☒	☐	☐

1. Not Applicable; For emergency permits, the public notice requirements in 20.11.41.24 NMAC shall apply instead.
2. It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.

20.11.41.13(D) NMAC

Item	Included in Application
A person who is seeking a construction permit pursuant to 20.11.41 NMAC shall complete a permit application and file one complete original and one duplicate copy with the Department.	☒
• A high-quality electronic duplicate copy is required by the Department to speed up review and allow for the Department public notice to be posted online. The electronic copy must be an exact duplicate of the hardcopy original, including pages with signatures such as the application certification page. Note: Do not include financial information, such as a copy of a check, in the electronic PDF.	☒
The electronic submittal on thumb drive, unless alternate method is allowed by the Department, must also include modeling files, if applicable, and emission calculations file(s) in Microsoft Excel-compatible format.	☒

The Permit Application shall include:

20.11.41.13(E) NMAC – Application Contents

Item	Included in Application	N/A ¹	Waived ²
(1) A complete permit application on the most recent form provided by the Department.	☒	☐	☐
(2) The application form includes:			
a. The applicant's name, street and post office address, and contact information;	☒	☐	☐
b. The facility owner/ operator's name, street address and mailing address, if different from the applicant;	☒	☐	☐
c. The consultant's name and contact information, if applicable;	☒	☐	☐
d. All information requested on the application form is included (<i>i.e.</i> , the form is complete).	☒	☐	☐
(3) The date the application was submitted to the Department.	☒	☐	☐
(4) Sufficient attachments for the following:			
a. Ambient impact analysis using an atmospheric dispersion model approved by the U.S. Environmental Protection Agency, and the Department to demonstrate compliance with the applicable National Ambient Air Quality Standards (NAAQS). <i>See 20.11.1 NMAC. If you are modifying an existing source, the modeling must include the emissions of the entire source to demonstrate the impact the new or modified source(s) will have on existing plant emissions.</i>	☒	☐	☐
b. The air dispersion model has been executed pursuant to a protocol that was approved in advance by the Department.	☒	☐	☐
c. Air dispersion modeling approved (or 2 nd denied) protocol date: March 4, 2026	☒	☐	☐
d. Basis or source for each emission rate (including manufacturer's specification sheets, AP-42 section sheets, test data, or corresponding supporting documentation for any other source used).	☒	☐	☐
e. All calculations used to estimate potential emission rates and controlled/proposed emissions.	☒	☐	☐
f. Basis for the estimated control efficiencies and sufficient engineering data for verification of the control equipment operation, including if necessary, design, drawing, test report and factors which affect the normal operation.	☒	☐	☐
g. Fuel data for each existing and/or proposed piece of fuel burning equipment.	☒	☐	☐
h. Anticipated maximum production capacity of the entire facility and the requested production capacity after construction and/or modification.	☒	☐	☐
i. Stack and exhaust gas parameters for all existing and proposed emission stacks.	☒	☐	☐
(5) An operational and maintenance strategy detailing:	☒	☐	☐
a. the steps the applicant will take if a malfunction occurs that may cause emission of a regulated air contaminant to exceed a limit that is included in the permit;	☒	☐	☐
b. the nature of emissions during routine startup or shutdown of the source and the source's air pollution control equipment; and	☒	☐	☐
c. the steps the applicant will take to minimize emissions during routine startup or shutdown.	☒	☐	☐
(6) A map, such as a 7.5' topographic quadrangle map published by the U.S. Geological Survey or a map of equivalent or greater scale, detail and precision, including a City or County zone atlas map that shows the proposed location of the source. Show proposed/ existing process equipment locations on aerial photograph requested in item 7.	☒	☐	☐

Item	Included in Application	N/A ¹	Waived ²
(7) An aerial photograph showing the proposed location of each process equipment unit involved in the proposed construction, modification, relocation or technical revision of the source except for federal agencies or departments involved in national defense or national security as confirmed and agreed to by the Department in writing.	☒	☐	☐
(8) A complete description of all sources of regulated air contaminants and	☒	☐	☐
a. a process flow diagram depicting the process equipment unit or units at the facility, both existing and proposed, that are proposed to be involved in routine operations and from which regulated air contaminant emissions are expected to be emitted. Include fugitive emission points as well.	☒	☐	☐
(9) A full description of air pollution control equipment, including all calculations and the basis for all control efficiencies presented, manufacturer's specifications sheets, and site layout and assembly drawings; UTM (universal transverse mercator) coordinates shall be used to identify the location of each emission unit.	☒	☐	☐
(10) A description of the equipment or methods proposed by the applicant to be used for emission measurement.	☒	☐	☐
(11) The maximum and normal operating time schedules of the source after completion of construction or modification, as applicable.	☒	☐	☐
(12) Any other relevant information as the Department may reasonably require, including without limitation:	☒	☐	☐
a. Provide an applicability determination for all potentially applicable federal regulations.	☒	☐	☐
b. Applicants shall provide the Zoning Requirement Cover Letter Form, along with documentary proof that the proposed air quality permitted use of the facility's subject property is allowed by the zoning designation of the City or County zoning laws, as applicable. Sufficient documentation includes: (i) a zoning certification from the City Planning Department or County Department of Planning and Development Services, as applicable, if the property is subject to City or County zoning jurisdiction; or (ii) a zoning verification from both planning departments if the property is not subject to City or County zoning jurisdiction. ³ A zone atlas map shall not be sufficient.	☒	☐	☐
c. Compliance History Disclosure Form ⁴	☒	☐	☐
d. BACT Analysis, if applicable, for new permit or permit modification applications.	☒	☐	☐
(13) The signature of the applicant, operator, owner or an authorized representative, certifying to the accuracy of all information as represented in the application and attachments, if any.	☒	☐	☐
(14) A check or money order for the appropriate application fee or fees required by 20.11.2 NMAC, <i>Fees</i> . (Online fee payments are now accepted as well. Application must be submitted first, then Department will provide invoice for online payment. Check box on Application Review Fee Checklist form to request invoice.)	☒	☐	☐

1. Not Applicable

2. It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.

3. Applicants are not required to submit documentation for the subject property's zoning designation when applying for a relocation of a portable stationary source, or a technical or administrative revision to an existing permit.

4. Required for applications filed pursuant to the following regulations: Construction Permits (20.11.41 NMAC); Operating Permits (20.11.42 NMAC); Nonattainment Areas (20.11.60 NMAC); Prevention of Significant Deterioration (20.11.61 NMAC); and Acid Rain (20.11.62 NMAC); except this Form shall not be required for asbestos notifications under 20.11.20.22 NMAC, and this Form shall only be required for administrative permit revision (20.11.41.28(A) NMAC) and administrative permit amendments (20.11.42.12(E)(1) NMAC) when the action requested is a transfer of ownership. Air Quality Program staff can answer basic questions about the Compliance History Disclosure Form but will not provide specific advice about which boxes to check or whether information must be disclosed. The decision about how to answer a question and whether there is information to disclose is the responsibility of applicants/permittees.

COMPLIANCE HISTORY		
A. Applicant/Permittee Name: Reliable Silver Corporation		Check Applicable Box: ☐ Applicant ☒ Permittee
B. Time Period of Compliance Reporting (10 Years):		<u>August 26, 2016</u> to <u>August 26, 2026</u>
<i>Instructions: For applicants, answer the following questions with information from within the 10 years preceding the current application. For existing permit holders requested to submit this form by the Program outside of an application, answer the following questions with information from within the 10 years preceding the Program's issuance of each permit.</i>		
C. Questions		
1	Knowingly misrepresented a material fact in an application for a permit?	☐ Yes ☒ No
2	Refused to disclose information required by the provisions of the New Mexico Air Quality Control Act?	☐ Yes ☒ No
3	Been convicted in any court of any state or the United States of a felony related to environmental crime?	☐ Yes ☒ No
4	Been convicted in any court of any state or the United States of a crime defined by state or federal statute as involving or being in restraint of trade, price fixing, bribery, or fraud?	☐ Yes ☒ No
5a	Constructed or operated any facility for which a permit was sought, including the current application, without the required air quality permit(s) under 20.11.41 NMAC, 20.11.42 NMAC, 20.11.60 NMAC, 20.11.61 NMAC, or 20.11.62 NMAC?	☐ Yes ☒ No
5b	If "No" to question 5a, mark N/A and go to question 6. If "Yes" to question 5a, state whether each facility that was constructed or operated without the required air quality permit met at least one of the following exceptions: i. The unpermitted facility was discovered after acquisition during a timely environmental audit that was authorized by the Program or the New Mexico Environment Department; or ii. The operator of the facility, using good engineering practices and established approved calculation methodologies, estimated that the facility's emissions would not require an air permit, and the operator applied for an air permit within 30 calendar days of discovering that an air permit was required for the facility.	☐ Yes ☐ No ☒ N/A
6	Had any permit revoked or permanently suspended for cause under the environmental laws of any state or the United States?	☐ Yes ☒ No
7	For each "yes" answer, or "no" to 5b, please attach an explanation and supporting documentation.	

I, the undersigned, hereby certify under penalty of law that this Compliance History Disclosure Form (Form) and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I have knowledge of the information in this Form and it is, to the best of my knowledge and belief, true, accurate, and complete. I understand that there are significant penalties for submitting false information, including denial of the application or revocation of a permit, as well as fines and imprisonment for knowing violations. If I filed an application, I covenant and agree to promptly supplement and correct information in this Form until the Program makes a final decision regarding the application. Further, I certify that I am qualified and authorized to file this Form, to certify to the truth and accuracy of the information herein, and bind the permittee and source.

Signed this 26th day of August, 20 26

Jayson Carruth
Print Name

EHS Manager
Print Title

[Signature]
Signature

Reliable Silver Corporation
Company Name



City of Albuquerque Environmental Health Department Air Quality Program



Permit Application Review Fee Checklist Instructions

All source registration and construction permit applications for stationary or portable sources shall be charged an application review fee according to the fee schedule in 20.11.2 NMAC. These filing fees are required for both new construction, reconstruction, and permit modification/revision applications. Most air quality notification (AQN) applications shall be charged an application review fee according to 20.11.39 NMAC. Qualified small businesses as defined in 20.11.2 NMAC may be eligible to pay one-half of the application review fees and 100% of all applicable federal program review fees.

Please fill out the permit application review fee checklist completely and submit with a check or money order payable to the "City of Albuquerque Fund 242" and:

1. Deliver it in person to the Albuquerque Environmental Health Department, 3rd Floor, Room 3023, Albuquerque-Bernalillo County Government Center, South Building, One Civic Plaza NW, Albuquerque, NM 87102; or
2. Mail it to Albuquerque Environmental Health Department, Air Quality Program, Permitting Division, P.O. Box 1293, Albuquerque, NM 87103; or
3. Online fee payments are now accepted as well. Application must be submitted first, then Department will provide invoice for online payment. Fill out form completely and mark check box below fee amount due on last page to request an invoice to pay the fee online.

The Department will provide a receipt of payment to the applicant. The person delivering or filing a submittal shall attach a copy of the receipt of payment to the submittal as proof of payment. Application review fees shall not be refunded without the written approval of the manager. If a refund is requested, a reasonable professional service fee to cover the costs of staff time involved in processing such requests shall be assessed. Please refer to 20.11.2 NMAC (effective January 10, 2011) for more detail concerning the "Fees" regulation as this checklist does not relieve the applicant from any applicable requirement of the regulation.

Special Instructions for Sections II and III

If your facility is applying for a new construction permit or modification subject to 20.11.41 NMAC, check either the review fee for stationary sources subject to 20.11.41 NMAC and not subject to proposed allowable emission rates **OR** check one of the review fees based on proposed allowable emission rates.

Then also check any additional Federal Program or Major Modification Review Fees that apply.

The Federal Program Review Fees apply to each subpart review that is triggered by this permitting action. Enter the number of subparts on the applicable line. For example, if you are installing a new boiler subject to 40 CFR 60, Subpart Dc, and a new emergency engine subject to 40 CFR 60, Subpart IIII, you would need to pay the 40 CFR 60 NSPS Federal Program Review Fee twice. The same would apply if units are being modified or replaced. However, if you are installing two emergency engines subject to 40 CFR 60, Subpart IIII, you would only pay the fee once because the fee is 'per subpart' not 'per unit'.

For modifications, the Federal Program fees only apply if a unit being modified is subject to federal regulations.



**City of Albuquerque
Environmental Health Department
Air Quality Program**



Permit Application Review Fee Checklist Effective January 1, 2026 – December 31, 2026

Please completely fill out the information in each section. Incompleteness of this checklist may result in the Albuquerque Environmental Health Department not accepting the application review fees. If you have any questions concerning this checklist, please call (505) 768-1972.

I. COMPANY INFORMATION:

Company Name	Reliable Silver Corporation Technologies Inc.		
Company Address	5941 Midway Park Blvd NE, Albuquerque, NM 87109		
Facility Name	North Facility		
Facility Address	5941 Midway Park Blvd NE, Albuquerque, NM 87109		
Contact Person	Jayson Carruth		
Contact Person Phone Number	(505) 948-8595	Email	jcarruth@reliablesilver.com
Are these application review fees for an existing permitted source located within the City of Albuquerque or Bernalillo County?		Yes ☒	No ☐
If yes, what is the current permit/registration/AQN number for this facility?		Permit # 1962-M2	
Is this application review fee for a Qualified Small Business as defined in 20.11.2 NMAC? (See Definition of Qualified Small Business on Page 4)		Yes ☐	No ☒

II. STATIONARY SOURCE APPLICATION REVIEW FEES:

If the application is for a new stationary source facility, please check all that apply. If this application is for a modification to an existing permit please see Section III. For revisions or relocations please see Sections IV or V.

Check All That Apply	Stationary Sources	Review Fee	Program Element
Air Quality Notifications			
☐	AQN New Application	\$720	2801
☐	AQN Technical Amendment	\$393	2802
☐	AQN Transfer of a Prior Authorization	\$393	2803
☒	Not Applicable	See Sections Below	
Stationary Source Review Fees			
☐	Source Registration required by 20.11.40 NMAC	\$734	2401
☐	A stationary source that requires a permit pursuant to 20.11.41 NMAC or other board regulation and is not subject to the below proposed allowable emission rates	\$1,467	2301
	A stationary source that requires a permit pursuant to 20.11.41 NMAC and is subject to review fees based on the proposed allowable emission rate for the single highest fee pollutant	Check the appropriate tpy range below	
☐	Proposed Allowable Emission Rate equal to or greater than 1 tpy and less than 5 tpy	\$1,101	2302
☐	Proposed Allowable Emission Rate equal to or greater than 5 tpy and less than 25 tpy	\$2,201	2303
☐	Proposed Allowable Emission Rate equal to or greater than 25 tpy and less than 50 tpy	\$4,402	2304
☐	Proposed Allowable Emission Rate equal to or greater than 50 tpy and less than 75 tpy	\$6,603	2305
☐	Proposed Allowable Emission Rate equal to or greater than 75 tpy and less than 100 tpy	\$8,804	2306
☐	Proposed Allowable Emission Rate equal to or greater than 100 tpy	\$11,005	2307
☒	Not Applicable	See Sections Below	

Federal Program Review Fees for each subpart (In addition to the Stationary Source Application Review Fees above)				
☐	40 CFR 60 – “New Source Performance Standards” (NSPS)	x	\$1,467	2308
☐	40 CFR 61 – “National Emission Standards for Hazardous Air Pollutants” (NESHAPs)	x	\$1,467	2309
☐	40 CFR 63 – (NESHAPs) Promulgated Standards	x	\$1,467	2310
☐	20.11.64 – (NESHAPs) Case-by-Case MACT Review (Major HAP sources)	x	\$14,674	2311
☐	20.11.61 NMAC – Prevention of Significant Deterioration (PSD) Permit	x	\$7,337	2312
☐	20.11.60 NMAC – Non-Attainment Area Permit	x	\$7,337	2313
	Total Federal Program Review Fees		\$	
☒	Not Applicable		Not Applicable	

III. MODIFICATION TO EXISTING PERMIT APPLICATION REVIEW FEES:

If the application is for a modification to an existing permit, please check all that apply. If this application is for a new stationary source facility, please see Section II. For revisions or relocations please see Sections IV or V.

Check All That Apply	Modifications	Review Fee	Program Element	
Modification Application Review Fees				
☐	Proposed modification to an existing stationary source that requires a permit pursuant to 20.11.41 NMAC or other board regulation and is not subject to the below proposed allowable emission rates	\$1,467	2321	
	Proposed modification to an existing stationary source that requires a permit pursuant to 20.11.41 NMAC and is subject to review fees based on the proposed allowable emission rate for the single highest fee pollutant	Check the appropriate tpy range below		
☒	Proposed Allowable Emission Rate equal to or greater than 1 tpy and less than 5 tpy	\$1,101	2322	
☐	Proposed Allowable Emission Rate equal to or greater than 5 tpy and less than 25 tpy	\$2,201	2323	
☐	Proposed Allowable Emission Rate equal to or greater than 25 tpy and less than 50 tpy	\$4,402	2324	
☐	Proposed Allowable Emission Rate equal to or greater than 50 tpy and less than 75 tpy	\$6,603	2325	
☐	Proposed Allowable Emission Rate equal to or greater than 75 tpy and less than 100 tpy	\$8,804	2326	
☐	Proposed Allowable Emission Rate equal to or greater than 100 tpy	\$11,005	2327	
☐	Not Applicable	See Sections Below		
Major Modifications Review Fees (In addition to the Modification Application Review Fees above)				
☐	20.11.60 NMAC – Permitting in Non-Attainment Areas	\$7,337	2333	
☐	20.11.61 NMAC – Prevention of Significant Deterioration	\$7,337	2334	
☒	Not Applicable	Not Applicable		
Federal Program Review Fees for each subpart (This section applies only if a Federal Program Review is triggered by the proposed modification) (These fees are in addition to the Modification and Major Modification Application Review Fees above)				
☐	40 CFR 60 – “New Source Performance Standards” (NSPS)	x	\$1,467	2328
☐	40 CFR 61 – “National Emission Standards for Hazardous Air Pollutants” (NESHAPs)	x	\$1,467	2329
☐	40 CFR 63 – (NESHAPs) Promulgated Standards	x	\$1,467	2330
☐	20.11.64 – (NESHAPs) Case-by-Case MACT Review (Major HAP sources)	x	\$14,674	2331
☐	20.11.61 NMAC – Prevention of Significant Deterioration (PSD) Permit	x	\$7,337	2332
☐	20.11.60 NMAC – Non-Attainment Area Permit	x	\$7,337	2333
	Total Federal Program Review Fees		\$	
☒	Not Applicable		Not Applicable	

IV. ADMINISTRATIVE AND TECHNICAL REVISION APPLICATION REVIEW FEES:

If the application is for an administrative or technical revision of an existing registration or permit issued pursuant to 20.11.40 or 20.11.41 NMAC, please check one that applies. For revisions to registrations, check Administrative Revisions.

Check One	Revision Type	Review Fee	Program Element
☐	Administrative Revisions	\$250	2340
☐	Technical Revisions	\$500	2341
☒	Not Applicable	See Sections II, III or V	

V. PORTABLE STATIONARY SOURCE RELOCATION FEES:

If the application is for a portable stationary source relocation of an existing permit, please check one that applies.

Check One	Portable Stationary Source Relocation Type	Review Fee	Program Element
☐	No New Air Dispersion Modeling Required	\$500	2501
☐	New Air Dispersion Modeling Required	\$750	2502
☒	Not Applicable	See Sections II, III or IV	

VI. Please submit payment in the amount shown for the total application review fee.

Section Totals	Review Fee Amount
Section II Total	\$0
Section III Total	\$1,101
Section IV Total	\$0
Section V Total	\$0
Total Application Review Fee	\$1,101

☒ Check here if an invoice is requested so Application Review Fee can be paid online.

I, the undersigned, a responsible officer of the applicant company, certify that to the best of my knowledge, the information stated on this checklist gives a true and complete representation of the permit application review fees which are being submitted. I also understand that an incorrect submittal of permit application reviews may cause an incompleteness determination of the submitted permit application and that the balance of the appropriate permit application review fees shall be paid in full prior to further processing of the application.

Signed this 26th day of August, 20 26

Jaxson Carruth

Print Name

EHS Manager

Print Title


Signature

Definition of Qualified Small Business as defined in 20.11.2 NMAC:

"Qualified small business" means a business that meets all of the following requirements:

- (1) a business that has 100 or fewer employees;
- (2) a small business concern as defined by the federal Small Business Act;
- (3) a source that emits less than 50 tons per year of any individual regulated air pollutant, or less than 75 tons per year of all regulated air pollutants combined; and
- (4) a source that is not a major source or major stationary source.

Note: Beginning January 1, 2011, and every January 1 thereafter, an increase based on the consumer price index shall be added to the application review fees. The application review fees established in Subsection A through D of 20.11.2.18 NMAC shall be adjusted by an amount equal to the increase in the consumer price index for the immediately-preceding year. Application review fee adjustments equal to or greater than fifty cents (\$0.50) shall be rounded up to the next highest whole dollar. Application review fee adjustments totaling less than fifty cents (\$0.50) shall be rounded down to the next lowest whole dollar. The department shall post the application review fees on the city of Albuquerque environmental health department air quality program website.



**City of Albuquerque
Environmental Health Department
Air Quality Program**



**Construction Permit (20.11.41 NMAC)
Zoning Requirement Cover Letter**

This Cover Letter Must Be Returned With The Application Along With All Required Attachments

The Albuquerque-Bernalillo County Joint Air Quality Program, which administers and enforces local air quality laws for the City of Albuquerque (“City”) and Bernalillo County (“County”), on behalf of the City Environmental Health Department (“Department”).

Any person seeking a new air quality permit or a permit modification under 20.11.41 NMAC (Construction Permits) shall provide documentary proof that the proposed air quality permitted use of the facility’s subject property is allowed by the zoning designation of the City or County zoning laws, as applicable. Sufficient documentation may include (i) a zoning certification from the City Planning Department or County Department of Planning and Development Services, as applicable, if the applicant is subject to City or County zoning jurisdiction; or (ii) a zoning verification from both planning departments if the applicant is not subject to City or County zoning jurisdiction. A zone atlas map shall not be sufficient. At this time, applicants are not required to submit documentation for the subject property’s zoning designation when applying for a relocation of a portable stationary source, or a technical or administrative revision to an existing permit.

The Department will rule an application administratively incomplete if it is missing or has incorrect information. If the Department has ruled an application administratively incomplete three (3) times, the Department will deny the permit application. Any fees submitted for processing an application that has been denied will not be refunded. If the Department denies an application, a person may submit a new application and the fee required for a new application. The applicant has the burden of demonstrating that a permit should be issued.

The Department may require additional information that is necessary to make a thorough review of an application. At all times before the Department has made a final decision regarding the application, an applicant has a duty to promptly supplement and correct information the applicant has submitted in an application to the Department. The applicant’s duty to supplement and correct the application includes, but is not limited to, relevant information acquired after the applicant has submitted the application and additional information the applicant otherwise determines is relevant to the application and the Department’s review and decision. While the Department is processing an application, regardless of whether the Department has determined the application is administratively complete, if the Department determines that additional information is necessary to evaluate or make a final decision regarding the application, the Department may request additional information and the applicant shall provide the requested additional information.

NOTICE REGARDING SCOPE OF A PERMIT: The Department’s issuance of an air quality permit only authorizes the use of the specified equipment pursuant to the air quality control laws, regulations and conditions. Permits relate to air quality control only and are issued for the sole purpose of regulating the emission of air contaminants from said equipment. Air quality permits are not a general authorization for the location, construction and/or operation of a facility, nor does a permit authorize any particular land use or other form of land entitlement. It is the applicant’s/permittee’s responsibility to obtain all other necessary permits from the appropriate agencies, such as the City Planning Department or County Department of Planning and Development Services, including but not limited to site plan approvals, building permits, fire department approvals and the like, as may be required by law for the location, construction and/or operation of a facility. For more information, please visit the City Planning Department website at <https://www.cabq.gov/planning> and the County Department of Planning and Development Services website at <https://www.bernco.gov/planning>.

Corporate and Facility Information: This information shall match the information in the permit application.

Air Quality Permit Applicant Company Name: Reliable Silver Technologies, Inc.			
Facility Name: North Facility			
Facility Physical Address: 5941 Midway Park NE	City: Albuquerque	State: NM	Zip: 87109
Facility Legal Description: LOT 16A REPLAT OF LOT 16 & 17 MIDWAY BUSINESS PARK CONT 3.0117 AC M/L			

General Operation Information: This information shall match the information in the permit application.

Permitting action being requested (please refer to the definitions in 20.11.41 NMAC):

☐ New Permit ☒ Permit Modification, Current Permit #: 1962-M2

Attachment Information: The location information provided to the City Planning Department or County Department of Planning and Development Services, as applicable, and reflected in the zoning certification or verifications, as applicable, shall be the same as the Facility location information provided to the Department in the air quality construction permit application.

☒ Zoning Certification Provided by: City Planning <i>This is a use-specific certification.</i> <u>City Planning Form:</u> https://www.cabq.gov/planning/code-enforcement-zoning <u>County Planning Form:</u> https://www.bernco.gov/planning/planning-and-land-use/applications-forms/	☐ City Zoning Verification ☐ County Zoning Verification <u>City Planning Form:</u> https://www.cabq.gov/planning/code-enforcement-zoning <u>County Planning Form:</u> https://www.bernco.gov/planning/planning-and-land-use/applications-forms/
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City of Albuquerque

CODE ENFORCEMENT

Plaza Del Sol Building, Suite 500
600 2nd Street NW
Albuquerque, NM 87102
Tel: (505) 924-3850 Fax: (505) 924-3847



Mayor Timothy M.
Keller

July 28, 2026

VIA Email, kflores@intera.com

INTERA

Karen Flores

2440 Louisiana Blvd NE Suite 700, Suite 700

Albuquerque, NM 87110

RE: 5941 MIDWAY PARK BLVD NE, Albuquerque, NM 87109 the "property"
UPC: 101706200114830304

To Whom It May Concern:

This letter will certify that according to the map on file in this office on July 28, 2026, the referenced property, legally described as: **LOT 16A REPLAT OF LOT 16 & 17 MIDWAY BUSINESS PARK CONT 3.0117 AC M/L Albuquerque, Bernalillo County, New Mexico, is Zoned: NON-RESIDENTIAL - BUSINESS PARK ZONE DISTRICT (NR-BP).**

The current use for this site is light manufacturing, a permissive use for this zone.

This property has been inspected and it was found in compliance, with the applicable provisions of the Integrated Development Ordinance. This site is controlled by an approved site development plan, Project #1001202. There are no special exemptions or overlays associated with this site.

If you have any questions regarding this matter please contact me at (505) 924-3363 or by email at amorefield@cabq.gov.

Sincerely:

Amanda Morefield,

Code Compliance Manager, Code Enforcement, Planning Department

BACT Analysis

Minor Permit Amendment

Prepared for:



Reliable Silver Corporation
5941 Midway Park Boulevard NE
Albuquerque, NM 87109

Prepared by:



INTERA Incorporated
2440 Louisiana Boulevard NE, Suite 700
Albuquerque, NM 87110

APRIL 2026

Table of Contents

1.0	BACT Analysis	1
1.1	Sources of Emissions	1
1.2	BACT Evaluation for a Thermal Wire Spray System	2
1.2.1	NO _x BACT Evaluation	2
1.2.2	CO BACT Evaluation	5
1.2.3	VOC BACT Evaluation	6
1.2.4	SO ₂ BACT Evaluation	8
1.2.5	PM BACT Evaluation	9
1.2.6	Ranking and evaluation of remaining control technologies	11
1.2.7	Selection of BACT	13
2.0	Conclusion	15
3.0	References	16

List of Tables

Table 1.	Particulate matter control efficiency of filter system used.
Table 2.1.	Capital costs.
Table 2.2.	Calculation of annualized costs using capital recovery method.
Table 3.	Proposed BACT controls and emission limits.

List of Attachments

Attachment 1	Donaldson Torit Cyclone Dust Collector Fact Sheet
Attachment 2	Donaldson Torit Ultra-Web Cartridge Fact Sheet
Attachment 3	EPA Air Pollution Control Technology Fact Sheet

Acronyms and Abbreviations

°F	degree(s) Fahrenheit
µm	micron(s)
BACT	Best Available Control Technology
cfm	cubic feet per minute
CO	carbon monoxide
CO(NH ₂) ₂	urea
CO ₂	carbon dioxide
CRF	capital recovery factor
DSI	dry sorbent injection
EPA	United States Environmental Protection Agency
ESP	electrostatic precipitator
FGR	flue gas recirculation
H ₂ O	water
INTERA	INTERA Incorporated
lbs/yr	pounds per year
LNB	low-NO _x burner
N ₂	nitrogen
NH ₃	ammonia
NMAC	New Mexico Administrative Code
NO _x	nitrogen oxide
O&M	operation and maintenance
PM	particulate matter
PM _{2.5}	particulate matter with an aerodynamic diameter less than 2.5 microns
PM ₁₀	particulate matter with an aerodynamic diameter less than 10 microns
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTFE	polytetrafluoroethylene
RBLC	RACT/BACT/LAER Clearinghouse
RICE	reciprocating internal combustion engine
RSC	Reliable Silver Corporation
SCR	selective catalytic reduction
SNCR	selective non-catalytic reduction
SO ₂	sulfur dioxide
VOC	volatile organic compound
WFGD	wet flue gas desulfurization

1.0 BACT Analysis

A Best Available Control Technology (BACT) analysis is a process of identifying options for controlling pollutants from an emissions-generating source and selecting the technology that is most appropriate.

BACT analysis is conducted on a case-by-case basis and considers factors such as technical feasibility, cost, environmental impacts, and energy requirements. The regulatory basis for performing a BACT analysis is promulgated in Title 40 of the Code of Federal Regulations (40 CFR) 52.21(j); the BACT analysis is intended to be performed for major sources in accordance with the Prevention of Significant Deterioration (PSD) program. The City of Albuquerque Environmental Health Department has implemented the BACT analysis as a requirement for any permit applications or permit modifications pertaining to operations within 1 mile of an overburdened area, as promulgated through Title 20 of the New Mexico Administrative Code (NMAC) Chapter 11 Part 72 (NMAC 20.11.72). Specifically, NMAC 20.72.8(C) states: "The department shall require every new or modified stationary source subject to permitting under 20.11.41 NMAC, 20.11.60 NMAC, or 20.11.61 NMAC that is located, or proposed to be located, in or within a one-mile radius of an overburdened area, as indicated by the overburdened areas map in effect as of the permit application date, to apply BACT even if the new or modified stationary source is not a major stationary source."

The BACT analysis identifies technologies capable of achieving the greatest reduction in pollutants, with the desired final outcome being a specific emission rate.

This analysis addresses emissions of criteria air pollutants regulated under the PSD program, including nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs), sulfur dioxide (SO₂), particulate matter with an aerodynamic diameter less than 2.5 microns (PM_{2.5}), and particulate matter with an aerodynamic diameter less than 10 microns (PM₁₀).

The purpose of this section of the permit application is to conduct a BACT analysis to satisfy the requirements for this project due to the proposed emissions sources' proximity to an overburdened area. A BACT analysis follows a "top-down" approach, as recommended by the United States Environmental Protection Agency (EPA). The process includes defining the scope of the analysis, as well as the following steps:

1. Identify all available control technologies.
2. Eliminate options that are not technically feasible.
3. Rank the remaining control technologies.
4. Evaluate the most effective control technologies.
5. Select BACT.

1.1 Sources of Emissions

This application contains two sources of air pollution, both established as a result of the proposed installation of a thermal spray system. The first source of emissions is the combustion of an acetylene fuel to promote the melting of [REDACTED] that is then applied to tubing. The second source of emissions is the particulates that are not applied to the tubes and are instead emitted as overspray particulates.

This analysis will take a systematic approach to evaluating potential control options for these operations to determine the most suitable option for control. Both sources of emissions emit from a compact enclosure that is wheel-mounted; the emissions from the combustion source (acetylene fuel torch) and the spray of [REDACTED] are considered to emit as one exhaust stream. It is noted that the EPA RACT/BACT/LAER Clearinghouse (RBLCL) is typically consulted to ascertain what control technologies have been considered BACT for similar applications. Because this particular operation is not a major source of emissions with respect to the PSD program, there is not a well-established BACT precedent for similar operations in the RBLCL.

1.2 BACT Evaluation for a Thermal Wire Spray System

The scope of the BACT evaluation in this section pertains to the combined exhaust consisting of combustion byproducts from the acetylene torch and overspray of [REDACTED] for the coating of tubes. The criteria pollutants that are emitted include: NO_x, CO, VOCs, SO₂, PM₁₀, and PM_{2.5}.

Sections 1.2.1 through 1.2.5 address Step 1 of the BACT process, which is to identify all available control technologies, and Step 2, which is to eliminate those that are not technically feasible. Section 1.2.6 addresses Step 3, which is to rank the remaining control technologies, and Step 4, which is to evaluate the most effective of the remaining control technologies.

1.2.1 NO_x BACT Evaluation

NO_x is generated as a byproduct of combustion from the acetylene torch. Specific considerations that drive greater rates of thermal NO_x formation include higher combustion temperatures, longer residence time of the combustion fuel/air mixture, and excess oxygen rates. Generally, two groups of control mechanisms may be pursued to control NO_x from combustion sources: pre-combustion control or post-combustion control. Pre-combustion control methods affect the method of combustion to control the rate of thermal NO_x formation. Post combustion control methods scrub exhaust streams through the reduction of NO_x compounds to nitrogen (N₂).

The first step of the BACT analysis is identifying all options for the control of NO_x. Those options are:

- Low-NO_x burners (LNBs);
- Flue gas recirculation (FGR);
- Steam injection;
- Selective catalytic reduction (SCR);
- Selective non-catalytic reduction (SNCR); and
- Good combustion practices.

1.2.1.1 Low NO_x Burners

LNBs control thermal NO_x formation through the tuning of combustion characteristics. These characteristics include lowering the flame temperature, limiting oxygen availability, and reducing the residence time of fuel/air mixtures in high-temperature zones. This can be achieved through staging the combustion reaction by introducing fuel and combustion air in varied steps. Lean fuel mixtures may be

introduced at the flame to lower the initial combustion temperature, while secondary zones could add additional fuel/air to complete combustion. This staging both reduces peak temperatures and lowers the overall temperature throughout the combustion process. Other techniques include internal recirculation of exhaust gases (flue) within the burner to dilute the flame. Another technique is to introduce the fuel/air mixture in a swirl pattern to maximize combustion stability through the enhanced blending of the fuel/air mixture.

LNBs are not considered a feasible option for this application. The application that RSC is requiring for thermal spray of [REDACTED] wire requires high temperatures in order to melt and soften the wire prior to its spray onto tubes. LNBs would directly impact the technical feasibility of this operation by reducing flame temperature, thus rendering the proposed activity inoperable. Further, there are scale and practical limitations to applicability to LNB for this application. The thermal spray system is contained within a compact robot-mounted cabinet, where the combustion occurs rapidly at the tip of the applicator torch; flame characteristics are specifically designed for reproducibility of coatings between tubes. The implementation of LNBs is utilized for large industrial-scale boilers and duct burners, where the staging of fuel/air mixtures can be carefully engineered and applied to systems with intricate ductwork systems and large combustion chambers.

1.2.1.2 Flue Gas Recirculation

In FGR, a portion of the exhaust stream from a downstream duct is reintroduced to the inlet streams feeding the combustion burner. The implementation of FGR lowers combustion temperatures through the reintroduction of relatively cooler gas streams to the burner. This approach also dilutes the combustion zone with inert compounds (e.g., nitrogen) that absorb heat, thus limiting thermal NO_x formation.

FGR is not considered a technically feasible option for NO_x control for this application due to competing mechanisms and the restrictions of scale. This application is a compact, robot-mounted spray system within a wheel-mounted enclosure where the high temperature of combustion is required to promote the melting of [REDACTED] for consistent spray and application for coating the tubes. The implementation of FGR would reduce the flame temperature and work against the aim of this activity. Further, the size of this application does not allow for the implementation of extraction of exhaust gas with fans, ductwork, piping, and control systems. Additionally, the process of combustion occurs quickly within this compact enclosure, with combustion occurring at a rapid pace. There is no time to implement FGR to increase residence time of the fuel/air mixture in a meaningful and practical way at this scale. Lastly, the introduction of fuel is occurring through the use of pressurized cylinders, not through the use of fans and blowers that would otherwise introduce fuels like pulverized coal or natural gas at precise rates. The lack of combustion air and fuel fans makes the implementation of FGR infeasible for this application.

1.2.1.3 Steam Injection

Steam injection reduces thermal NO_x formation through the reduction of flame temperature. Steam absorbs heat due to its high specific heat and latent heat of vaporization, which in turn lowers the flame temperature and slows the reactions that form NO_x .

Steam injection is not a feasible control option for the thermal spray wire system. This compact enclosure does not have a well-defined combustion chamber where steam injection locations can be implemented. The short residence of the fuel/air mixture and the low fuel flow rates make it infeasible to control thermal NO_x formation with any precision. Further, the implementation of steam injection would render the application of [REDACTED] on tubes inoperable, as the necessary precision and repeatability of the automated coating process would be impacted.

1.2.1.4 Selective Catalytic Reduction

SCR is post-combustion NO_x control technology that is utilized to reduce NO_x to N_2 in the presence of ammonia (NH_3) or urea ($\text{CO}(\text{NH}_2)_2$) and a catalyst. SCR technologies are often utilized in large-scale combustion applications in which combustion activities are occurring at steady state over long periods of time at consistent temperatures and flow rates. Conventional applications for SCR include large industrial-scale boilers, power generating facilities, cement and glass kilns, and gas turbines.

SCR is not considered a feasible option for NO_x control for this operation. The use of the thermal spray wire system is batch-based, and thus, the resulting exhaust from the coating process will be intermittent and have fluctuating characteristics. SCR technology requires stable conditions of flow rate and temperature in order to achieve the required reduction. Temperature must be adequately maintained around 480–850 degrees Fahrenheit ($^{\circ}\text{F}$) for the NO_x reduction reaction to take place; at lower temperatures, the NO_x reduction will drop precipitously, and at higher temperatures the catalyst will be damaged. The implementation of an SCR system also presents a physical space constraint on an application that is meant to be compact, enclosed, and wheel-mounted, as an SCR system contains layers of catalyst, reagent solution storage, injection systems, and metering. These considerations vastly exceed the footprint of the proposed operation. Further, the enclosure that the automatic robotic applicators work within to spray [REDACTED] do not readily separate fumes produced by the combustion process from the particulates generated from the particulates that are not applied to tubes. Thus, the SCR catalyst would become plugged with particulates from the [REDACTED] application process, which could further deactivate the catalyst within the SCR.

1.2.1.5 Selective Non-Catalytic Reduction

SNCR is post-combustion NO_x control technology that is utilized to reduce NO_x to N_2 in the presence of NH_3 or urea without the use of a catalyst. SNCR technologies are often utilized in large-scale combustion applications where combustion activities are occurring at steady state over long periods of time at consistent temperatures and flow rates. Common industries and activities where SNCR is employed include large industrial-scale boilers, cement and glass kilns, and waste-to-energy plants. Key differences from SCR include higher operability temperatures, lower NO_x control efficiencies, and lack of catalyst.

SNCR is not considered a feasible option for NO_x control for this operation. The use of the thermal spray wire system is batch-based, and thus, the resulting exhaust from the coating process will be intermittent and have fluctuating characteristics. SNCR technology requires stable conditions (e.g., flow rate and temperature) in order to achieve the required reduction. Temperature must be adequately maintained around 850–1100 degrees Celsius for the reaction to take place; at lower temperatures, the NO_x reduction will drop precipitously. The implementation of an SNCR system in this instance also presents physical space constraints for an application that is meant to be compact and enclosed in a wheel-

mounted system. A typical SNCR system contains reagent solution storage, injection systems, and metering. The enclosure that the automatic robotic applicators work within to spray [REDACTED] is compact, and there is not a well-defined combustion zone to install lances for NH_3 or urea spray. Further, the injection of reagents within the coating enclosure would reduce the precision of the applicators and render the selected process inoperable.

1.2.1.6 Good Combustion Practices

While technological NO_x control methods are not feasible for the thermal wire spray system, it is feasible to implement good combustion practices. The thermal spray wire device will be operated according to manufacturer specifications to properly conduct the proposed activity. Operating the system according to manufacturer specifications, the flame geometry and combustion residence time will be minimized to the extent possible. The flame will be maintained as close to stoichiometric ratios of fuel and oxygen as required to optimize the resulting emissions of NO_x . The combustion will only occur during times when tubes are being coated [REDACTED]. The combustion fuel used will be limited to Grade B acetylene.

1.2.2 CO BACT Evaluation

Carbon monoxide (CO) is generated as a byproduct of incomplete combustion. Specific considerations that drive greater rates of CO formation include insufficient oxygen levels, lower flame temperatures, shorter residence time of the combustion fuel/gas mixture, and poor mixing of fuel and air. Generally, there are two groups of control mechanisms that may be pursued to control CO generation from combustion sources: combustion optimization or post-combustion control. Combustion optimization efforts are pursued to reduce the rate of CO formation from a particular combustion source. Post combustion control methods scrub exhaust streams through the oxidation of CO to carbon dioxide (CO_2).

The first step of the BACT analysis is identifying all options for the control of CO. Those options are:

- Thermal oxidizer;
- Oxidation catalyst; and
- Combustion optimization and good combustion practices.

1.2.2.1 Thermal Oxidizer

Thermal oxidizers use high-temperature combustion to promote oxidation of residual organics and CO to CO_2 and water (H_2O). A thermal oxidizer requires a continuous enclosed exhaust flow to ensure consistent application of heat to the waste stream. This system also requires fuel to continuously heat the oxidation chamber to 1400–1800 °F throughout the thermal oxidizer's operation. Another consideration is ensuring the residence of the scrubbed gas for at least 0.5–2 seconds within the combustion chamber to complete the combustion of CO.

A thermal oxidizer is not considered feasible for this operation. The compact enclosed thermal spray system does not contain a dedicated piece of ductwork or piping for the emissions of CO specific to combustion. Further, the intermittent operation of the thermal wire spray system does not generate a

consistent, continuous flow of exhaust gas for treatment in a post-combustion control system. Thus, a thermal oxidizer is not considered feasible for this operation.

1.2.2.2 Oxidation Catalyst

Oxidation catalysts are physical catalyst media that promote the oxidation of contaminants within an exhaust stream. These systems work in temperature ranges in the range of 480–750 °F. The solid catalyst is typically a platinum, palladium, or similar precious metal material. Oxidation catalysts are typically retrofitted on combustion systems that have relatively continuous operations, like reciprocating internal combustion engines (RICEs), electric-power generating facilities, turbines, and industry-scale boilers.

Oxidation catalyst is not considered feasible for this operation. The compact enclosure that houses the thermal spray system does not contain a dedicated piece of ductwork or piping for the emissions of CO specific to combustion. It is anticipated that any CO generated will be intermingled with the free particulates and metals that are emitted, which would result in overspray accumulation on the oxidation catalyst; ultimately, the oxidation catalyst would become plugged and deactivated in this type of application. Further, this type of application does not produce consistent exhaust at a temperature and quantity sufficient for proper operation of the oxidation catalyst; the batch operation of the thermal wire spray system would lead to inconsistent quality and flow rates of exhaust, which is not compatible with oxidation catalyst.

1.2.2.3 Good Combustion Practices

Good combustion practices include use of combustion optimization methods. Combustion optimization methods are employed to reduce CO formation while retaining the integrity of the flame and combustion system for a given process. These specific methods could include fuel/air ratio tuning, mixture improvement, increased residence time, higher flame temperatures, and avoidance of flame quenching. Note that there is an inverse relationship between thermal NO_x formation and CO formation in combustion systems that require an adequate balance to minimize the combined control of both pollutants. The enclosed thermal spray system will be operated according to manufacturer settings to ensure that the proper balance of technical application for emissions minimization.

While post-combustion CO control methods are not feasible for this operation, it is feasible to implement good combustion practices. The thermal spray wire device will be operated according to manufacturer specifications, as necessary to operate the proposed activity. Operating the system according to manufacturer specifications, the flame geometry and combustion residence time will be optimized by the manufacturer to the maximum extent possible. The flame will be maintained as close to stoichiometric ratios of fuel and oxygen as required to optimize the resulting emissions of NO_x and CO. The combustion will only occur during times when tubes are being coated [REDACTED] The combustion fuel used will be limited to Grade B acetylene.

1.2.3 VOC BACT Evaluation

VOCs are generated as a byproduct of incomplete combustion, partial oxidation of hydrocarbons, and formation of unburned or partially oxidized hydrocarbons. Generally, two groups of control mechanisms

may be pursued to control VOC generation from combustion sources: combustion optimization or post-combustion control. Combustion optimization efforts are pursued to reduce the rate of VOC formation from a particular combustion source. Post-combustion control methods scrub exhaust streams through the oxidation of VOC compounds to CO₂ and H₂O. Generally, the control technologies for VOCs are similar to those identified for CO.

The first step of the BACT analysis is identifying all options for the control of VOCs. Those options are:

- Thermal oxidizer;
- Oxidation catalyst; and
- Combustion optimization and good combustion practices.

1.2.3.1 Thermal Oxidizer

Thermal oxidizers use high-temperature combustion to promote oxidation of residual organics and CO to CO₂ and H₂O. A thermal oxidizer requires a continuous enclosed exhaust flow to ensure consistent application of heat to the waste stream. This system also requires fuel to continuously heat the oxidation chamber to 1400–1800 °F throughout the thermal oxidizer's operation. Another consideration is ensuring the residence of the scrubbed gas for at least 0.5–2 seconds within the combustion chamber to complete the combustion of VOCs.

A thermal oxidizer is not considered feasible for this operation. The compact enclosed thermal spray system does not contain a dedicated piece of ductwork or piping for the emissions of VOCs specific to combustion. Further, the intermittent operation of the thermal wire spray system does not generate a consistent, continuous flow of exhaust gas for treatment in a post-combustion control system. Thus, a thermal oxidizer is not considered feasible for this operation.

1.2.3.2 Oxidation Catalyst

Oxidation catalysts are physical catalyst media that promote the oxidation of contaminants within an exhaust stream. These systems work in temperature ranges in the range of 480–750 °F. The solid catalyst is typically a platinum, palladium, or similar precious metal material. Oxidation catalysts are typically retrofitted on combustion systems that have relatively continuous operations like RICEs, electric-power generating facilities, turbines, and industry-scale boilers.

Oxidation catalyst is not considered feasible for this operation. The compact enclosure that houses the thermal spray system does not contain a dedicated piece of ductwork or piping for the emissions of CO specific to combustion. It is anticipated that any CO generated will be intermingled with the free particulates and metals that are emitted, which would result in overspray accumulation on the oxidation catalyst; ultimately, the oxidation catalyst would become plugged and deactivated in this type of application. Further, this type of application does not produce consistent exhaust at a temperature and quantity sufficient for proper operation of the oxidation catalyst; the batch operation of the thermal wire spray system would lead to inconsistent quality and flow rates of exhaust, which is not compatible with oxidation catalyst.

1.2.3.3 Good Combustion Practices

While post-combustion VOC control methods are not feasible for this operation, it is feasible to implement good combustion practices. The thermal spray wire device will be operated according to manufacturer specifications, as necessary to operate the proposed activity. Operating the system according to manufacturer specifications, the flame geometry and combustion residence time will be optimized by the manufacturer to the maximum extent possible. The flame will be maintained as close to stoichiometric ratios of fuel and oxygen according to manufacturer settings to optimize the resulting emissions of combustion byproducts. Combustion will only occur during times when tubes are being coated [REDACTED]. The combustion fuel used will be limited to Grade B acetylene.

1.2.4 SO₂ BACT Evaluation

SO₂ is generated as a byproduct of the oxidation of sulfur compounds that are present in a combusted fuel gas. Generally, SO₂ mitigation must be achieved through the selection of a fuel with lower sulfur content or scrubbed downstream of the combustion source (post-combustion control).

The first step of the BACT analysis is identifying all options for the control of SO₂. Those options are:

- Wet flue gas desulfurization (WFGD);
- Dry sorbent injection (DSI); and
- Good combustion practices.

1.2.4.1 Wet Flue Gas Desulfurization

WFGD is a control strategy for mitigating SO₂ emissions from flue gas streams. This approach utilizes an absorber column that recirculates a slurry of limestone-laden water from the bottom of the column to the top of the column. The slurry is reintroduced to the top of the scrubber through spray nozzles. The SO₂ entrained in the flue gas reacts with the limestone to create a gypsum byproduct, which accumulates in the slurry and is later separated and dried in a wastewater treatment system. The cleaned flue gas exits the column with lower SO₂ concentrations and lower temperatures.

WFGD technology is not considered feasible for this operation due to the inherently low emission rate of SO₂ from this source. The inlet loading of any flue gas that could be pulled from the compact thermal spray system would not be sufficient for further SO₂ removal. Typical WFGD outlet guarantees range from 100–10 parts per million (ppm) SO₂ with typical inlet loading rates ranging from 3,000–300 ppm SO₂; the proposed SO₂ rate from this operation are already from a source that will emit ~167 ppm SO₂. WFGD is not seen as a technically feasible option for this application.

1.2.4.2 Dry Sorbent Injection

DSI is the introduction of dry alkali powder directly into a flue gas duct that reacts with acid gases like SO₂ and converts them into solid byproducts that can be removed in downstream particulate control devices. DSI technology requires reagent storage silos, metering controls, injection lances, pneumatic conveyance of reagent, and downstream particulate control methods like a baghouse or electrostatic precipitator (ESP). DSI works best in moderate temperature ranges.

DSI is considered technically infeasible for this application. The batch nature of the coating application of the thermal wire spray system will lead to highly variable gas flow and inconsistent gas temperatures that are too low for DSI compatibility. Further, the implementation of DSI increases the amount of particulate matter present in the flue gas, resulting in an unnecessary increase in the amount of particulates to be controlled in a downstream control system. Lastly, the implementation of injection lances requires additional ductwork to allow for adequate mixing of the exhaust flue with the SO₂ and reagent; this system is intended to be contained within a compact system, and adequate duct locations for injection lances will not exist. DSI is not a technically feasible system for this application.

1.2.4.3 Good Combustion Practices

While post-combustion SO₂ control methods are not feasible for this operation, it is feasible to implement good combustion practices. The thermal spray wire device will be operated according to manufacturer specifications, as necessary to operate the proposed activity. Combustion will only occur during times when tubes are being coated [REDACTED]. Combustion fuel will be limited to Grade B acetylene, with a fuel supplier guaranteed sulfur content of less than or equal to 500 ppm sulfur.

1.2.5 PM BACT Evaluation

PM is generated as a result of overspray [REDACTED] during the process of coating tubes. Minimal amounts of PM are also generated as a result of the combustion of the acetylene torch; however, the main contributor to PM generation is the overspray from the coating device. This section will analyze BACT for PM_{2.5} and PM₁₀ concurrently. The first step of the BACT analysis is identifying all options for the control of PM. Those options are:

- Electrostatic precipitator (ESP);
- Cyclone dust collector;
- Filters;
- High Efficiency Particulate Air (HEPA) filters; and
- Good combustion practices.

1.2.5.1 Electrostatic Precipitator

ESPs are air pollution control devices that remove PM from gas streams using electrostatic forces. In an ESP, exhaust gas is directed through a chamber where particles are electrically charged by high-voltage electrodes. These charged particles are then attracted to and collected on oppositely charged plates. The collected material is periodically removed by mechanical rapping or washing. Gas is typically routed to the ESP through ductwork, often after passing through flow straighteners to ensure even distribution. ESPs are widely used in industries such as power generation, cement, steel, and waste incineration. While they are not commonly used in metal coating or painting operations—where baghouses or dry filters are more typical—wet ESPs may be applied in specialized metal processing where fine mists or submicron particles are present.

An electrostatic precipitator is not a good fit for handling particulate emissions from a thermal spray process that generates overspray of [REDACTED] such as [REDACTED]. Metallic particles of this type are

highly conductive, ductile, and often sticky, which makes them unsuitable for ESP operation. When deposited on collection plates, they can cause sparking, back-corona, and fouling, all of which reduce collection efficiency and require frequent rapping cycles.

Beyond particle behavior, ESPs require substantial infrastructure including high-voltage power supplies, transformer-rectifiers, collection fields, rappers, hoppers, and access platforms that are disproportionate to the scale and configuration of a compact thermal spray system. Given these constraints, ESPs are not a practical or effective control technology for this type of application.

1.2.5.2 Cyclone Separator

The cyclone separator dust collector is a mechanical air filtration system that uses centrifugal force to separate coarser particulate matter from an airstream. Incoming exhaust air from the wire spray system is directed by a helical baffle into a cyclonic motion, causing heavier particles to move outward and settle into a collection hopper or drum. Clean air is then drawn through an inner cylinder and discharged into the downstream filtration system.

Their durability and low maintenance requirements make cyclone separators a cost-effective solution for capturing medium to coarse particulate matter, especially in applications where high-efficiency filtration is not critical. However, they are generally less effective for capturing very fine particles (i.e., <5 microns) unless used in multi-stage systems or paired with secondary filters.

The proposed thermal coating system uses a cyclone separator as the first stage of particulate emissions control to recover coarse particulate matter. While the use of a cyclone is considered technically feasible for initial collection of larger particles, it is not sufficient as a standalone particulate matter control system to meet BACT-level performance requirements.

1.2.5.3 Filters

Several filtration technologies are available for controlling PM_{2.5} and PM₁₀ emissions from coating operations. The following summarizes commonly used filter types, their operating principles, and typical control efficiencies.

Fabric filters are air pollution control devices used to capture PM from industrial exhaust streams, including those from large-scale metal coating operations. Baghouses operate by filtering dust- or particulate-laden air through fabric filter bags. As the air passes through the fabric, particles are trapped on the surface, forming a “dust cake” that enhances filtration. The cleaned air exits the system, while the dust cake is periodically removed using one of several cleaning methods, including shaker cleaning, reverse-air cleaning, and pulse-jet cleaning. Fabric filters are capable of collecting particles ranging in size from submicron to several hundred microns, typically achieving control efficiencies greater than 99–99.9%.

Cartridge filters use pleated filter media arranged in cylindrical or oval cartridges. The pleated design provides a high surface area in a compact footprint, making them suitable for smaller systems. Cartridge filters typically use pleated media made from cellulose, polyester, polyester-cellulose blends, polytetrafluoroethylene (PTFE)-coated fabrics, or nanofiber-enhanced materials. These filters can achieve capture efficiencies of 99.99% or greater for PM_{2.5} and PM₁₀ particulate matter.

HEPA filters use dense, randomly arranged fibers to trap particles through diffusion, interception, and impaction. HEPA filters are constructed from dense glass microfiber, synthetic fibers such as polypropylene, or PTFE membranes to achieve high-efficiency particulate capture. HEPA filters are designed to capture at least 99.97% of particles ≥ 0.3 microns.

1.2.6 Ranking and evaluation of remaining control technologies

The technically feasible options for emissions include:

- Good combustion practices for NO_x, CO, VOCs, and SO₂; and
- Filter system for PM_{2.5} and PM₁₀

1.2.6.1 NO_x, CO, VOC, and SO₂ Emissions

Good combustion practices are only feasible option for the thermal spray system BACT for NO_x, CO, VOCs, and SO₂ because they directly address the root causes of pollutant formation while preserving the operational integrity of the process. By optimizing flame geometry, fuel-to-oxygen ratios, and residence time, emissions of NO_x, CO, VOCs, and SO₂ can be minimized without compromising the high-temperature requirements essential for melting and applying [REDACTED] wire. These practices are easily implemented within the compact, robot-mounted enclosure and align with manufacturer specifications, ensuring consistent coating quality and reproducibility. Additionally, using Grade B acetylene with low sulfur content further reduces SO₂ emissions at the source. This approach offers practical, scalable, and reliable means of emission control, tailored to the system's design and operational needs.

1.2.6.2 PM_{2.5} and PM₁₀

For PM emissions, a high-efficiency filter system is the most effective and feasible control technology. The thermal spray process inherently generates fine metal particulates and overspray, which are best captured using filtration. Unlike gaseous pollutants, these particulates can be effectively removed from the exhaust stream without interfering with the coating process. The filter system can be integrated into the compact enclosure of the thermal spray unit and tailored to the specific particle size distribution of the emitted materials. This ensures compliance with air quality standards for PM_{2.5} and PM₁₀ while maintaining the mobility and operational precision of the robotic spray system. Filtration offers a proven, scalable, and technically compatible solution for particulate control in this application.

The proposed thermal wire coating system is [REDACTED] a customized, automated flame-spray system for thermal coating applications using acetylene fuel. [REDACTED] Each compartment generates an exhaust air stream containing combustion products and overspray [REDACTED] coating, which is routed to a Donaldson Torit Cyclone 30-10. The cyclone acts as a mechanical dust/particulate matter collector, using centrifugal force to remove coarse particulate matter and overspray [REDACTED] coating before the air moves to downstream filtration.

After the cyclone, the exhaust air passes through Donaldson Torit DFE 4-16 cartridge filters rated MERV 15 under ASHRAE 52.2-2007, which capture fine particles. The filtered air then flows through Donaldson Torit Ultra-Lok HEPA filters, which are also effective in removing fine particles such as PM_{2.5} and PM₁₀.

This multi-stage system ensures high-efficiency particulate control before the air is vented locally into the wire coating room.

An air exchanger system is used to bring filtered air into the [REDACTED] system room. Air from the [REDACTED] room is vented to the atmosphere. There is no specific vent pipe from the [REDACTED] room.

The cyclone dust collector is a mechanical air filtration system that uses centrifugal force to separate coarser particulate matter from an airstream. Incoming exhaust air from the wire spray system is directed by a helical baffle into a cyclonic motion, causing heavier particles to move outward and settle into a collection hopper or drum. Clean air is then drawn through an inner cylinder and discharged into the downstream filtration system.

The DFE 4-26 filters are rated as MERV 15 under ASHRAE 52.2-2007, meaning they effectively capture particles in the 0.3- to 1.0-micron range. MERV 15 filters can remove approximately 85% of PM_{2.5} and 90% of PM₁₀, depending on operating conditions and dust characteristics.

The Ultra-Lok HEPA filter provides 99.97% removal efficiency for particles ≥ 0.3 microns, which includes fine particulate matter such as PM_{2.5} and PM₁₀.

The cyclone dust collector, DFE 4-16 filters and HEPA filters are a part of the customized, standard design for operating the wire spray system and are designed primarily to recover [REDACTED] used in the coating operation and to reduce particulate matter emissions into the coating operations room.

The basis for the particulate matter control efficiency is based on the following:

Table 1. Particulate matter control efficiency of filter system used.

Control Stage	Filter System Control Method	PM 2.5 Control Efficiency %	PM 10 Control Efficiency %	Basis
1	Cyclone 30-10	10%	60%	Manufacturer data
2	DFE 4-16 Filters (MERV 15)	85%	90%	MERV 15 data
3	Ultra-Lok HEPA Filters	99.97%	99.97%	HEPA standard
Overall Control Efficiency		99.996%	99.999%	

The following two tables summarize the capital costs and estimated operation and maintenance (O&M) costs for the PM control system associated with the proposed [REDACTED] thermal spray operations. These tables also present the annualized cost and annualized cost effectiveness for PM removal. The annualization of capital costs was calculated using the Capital Recovery Factor (CRF) methodology outlined in the EPA Air Pollution Control Cost Manual.

The annualized cost for PM control is \$11,227 per year, which corresponds to an annualized cost effectiveness of approximately \$2,807 per pound of PM removed, or \$5.6 million per ton. This high cost per ton reflects the very low PM emissions from the process.

Table 2.1. Capital costs.

Description	Unit Price	Total
DFE 4-16 Cartridge Dust Collector for .98/1 A/C Ratio for Direct Flame Spray Hood Pickups 4000 cfm	\$30,078	\$60,156
30-10 Cyclone- AW	\$9,334	\$9,334
TBI-15 HP 60 cycle fan for DFE 4-16	\$5,800	\$11,600
TBI -15 Fan for DFE 3-6	\$8,123	\$8,123
15 HP 460 V Quick Ship Panel with Delta P Plus Control for DFE 4-16 & DFE 3-6	\$41,956	\$125,868
ULTRA LOK HEPAS for return air	\$6,538	\$6,538
		\$221,619

Table 2.2. Calculation of annualized costs using capital recovery method.

Capital costs:	\$221,619
Annual operation and maintenance (O&M) est. costs:	\$40,000
Equipment life in years:	20
Interest rate based EPA BACT guidance:	7%
Calculated PM removed (lbs/yr):	4
Capital Recovery Factor (CRF):	\$0.0944
Annualized cost:	\$60,921
Annualized cost effectiveness per lb PM removed:	\$15,230
Annualized cost effectiveness per ton PM removed:	\$30,460,500

Notes:

Annualized cost = (Capital cost)(CRF) + O&M costs

Cost effectiveness = (Annualized Cost)/(lbs removed)

Cost effectiveness = (Annualized Cost)/(tons removed)

1.2.7 Selection of BACT

In the final step of this analysis, BACT emission limits are established for each criteria air pollutant associated with the thermal wire spray system, based on the evaluations conducted in the preceding steps. We propose the following as BACT, as summarized in Table 3.

Table 3. Proposed BACT controls and emission limits.

Constituent	Proposed BACT	BACT Emission Limit (tons per year)
CO	Good Combustion Practices	0.08
NO _x		0.02
SO ₂		0.05
VOC		0.02
PM ₁₀	Filter System	0.012
PM _{2.5}		0.012

2.0 Conclusion

The BACT analysis for the [REDACTED] thermal spray system evaluated control options for NO_x, CO, VOCs, SO₂, and PM (PM₁₀ and PM_{2.5}). For gaseous pollutants (NO_x, CO, VOCs, and SO₂), additional control devices were determined to be technically infeasible due to the system's compact design and operational requirements. The most practical and effective approach for these pollutants is implementing good combustion practices, including maintaining stoichiometric fuel-to-air ratios and using Grade B acetylene with low sulfur content. For particulate matter, the selected multi-stage filtration system—comprising a cyclone separator, MERV 15 cartridge filters, and HEPA filters—achieves overall control efficiencies exceeding 99.99% and is part of a customized, standard system designed to recover [REDACTED] and reduce particulate matter emissions within the coating operations room.

The cost analysis indicates that while the PM control system is highly effective, the annualized cost effectiveness is approximately \$15,230 per pound of PM removed (or \$30.56 million per ton), reflecting the very low PM emission rate from the process. This high cost per ton demonstrates that the chosen controls are primarily driven by operational and environmental best practices rather than economic feasibility.

In conclusion, based on technical feasibility, environmental benefit, and compliance with regulatory requirements, BACT for the [REDACTED] thermal spray system is defined as:

- Good combustion practices for NO_x, CO, VOCs, and SO₂.
- Cyclone plus high-efficiency filtration (MERV 15 and HEPA) for PM₁₀ and PM_{2.5}.

These controls represent the most effective and practical technologies for this application, ensuring emissions are minimized while maintaining process integrity. Although cost effectiveness for PM control is high due to low emission rates, the selected approach achieves near-complete particulate capture and aligns with EPA BACT guidance.

3.0 References

Code of Federal Regulations (CFR). 1971. Title 40. Part 52. Prevention of significant deterioration of air quality.

National Air Filtration Association (NAFA). 2008. Understanding MERV: NAFA User's Guide for ANSI/ASHRAE.

New Mexico Administrative Code (NMAC). Title 20: Environmental Protection. Chapter 11: Albuquerque – Bernalillo County Air Quality Control Board. Part 41 – Construction Permits.

NMAC. Title 20: Environmental Protection. Chapter 11: Albuquerque – Bernalillo County Air Quality Control Board. Part 72 – Health, Environmental and Equity Impacts.

United States Environmental Protection Agency (EPA). *Air Pollution Control Cost Manual*. Seventh Edition (in progress). Office of Air Quality Planning and Standards, Research Triangle Park, NC. Available at: <https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/cost-reports-and-guidance-air-pollution>

Attachment 1

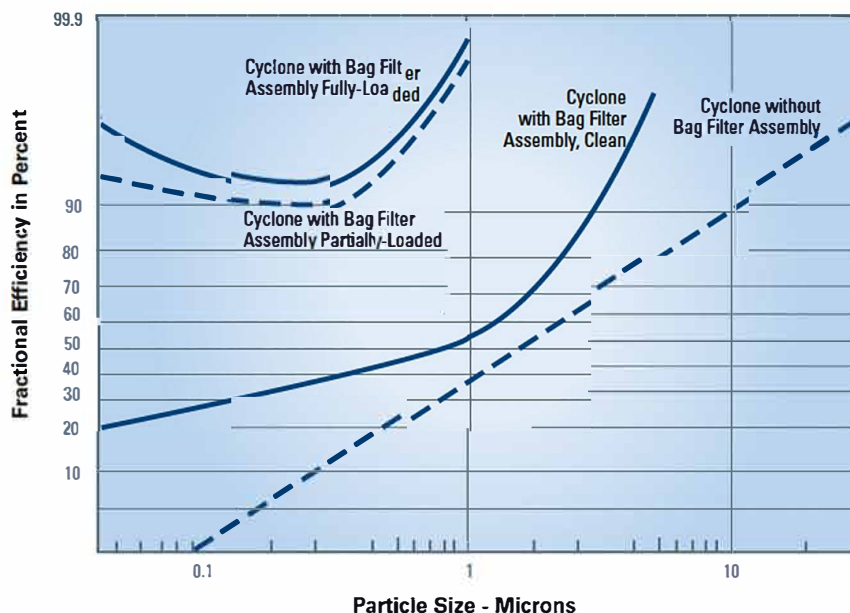
Donaldson Torit Cyclone Dust Collector Fact Sheet

Mechanical separator using centrifugal force to remove large and high-volume dust from industrial applications.

- An economical solution to a wide range of dust collection problems
- Excellent for high dust load, high temperature, and product recovery applications
- Can be used alone, with optional bag filter assembly, or as a pre-cleaner
- Applications from 300 - 13,000 cfm (510 - 22,082 m³/h)
- Heavy-duty construction for long life and low maintenance
- Meets most seismic and 90 mph (145 kmph), Exp C wind load ratings
- Removable cone section for easy replacement



Cyclone Dust Collector
with Optional Bag Filter Assembly

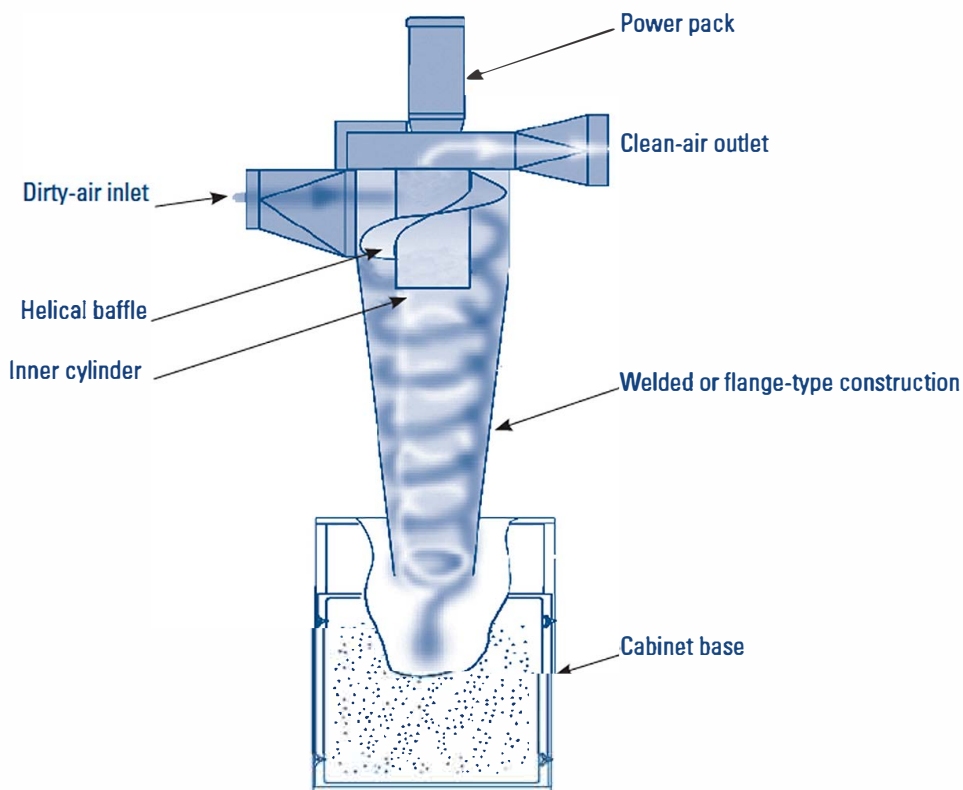


Fractional Efficiency is the ratio of particles collected to particles entering the cyclone.

This chart illustrates the efficiency* of a Cyclone collector with and without an optional filter bag assembly under clean, partially-loaded, and fully-loaded filter bag conditions.

* Actual efficiency may vary depending on the application. Dust concentration, airflow, particle shape, and density affect filtration efficiency.

OPERATIONAL EXPLANATION



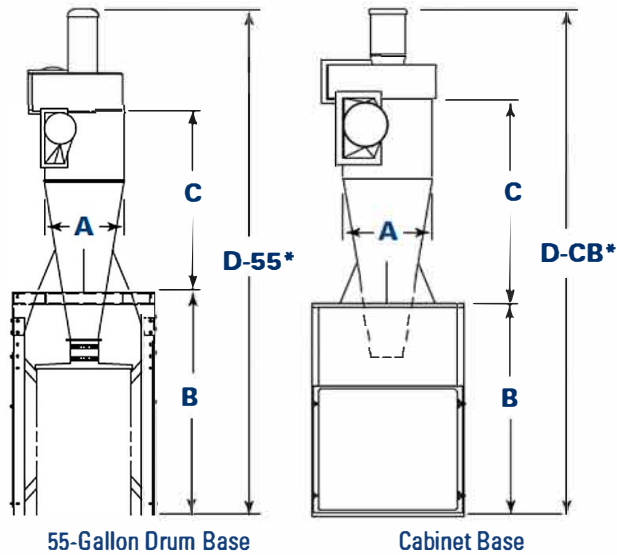
Dust-laden air enters the unit through the air inlet and is diverted by a helical baffle. Centrifugal force moves the heavy dust particles to the interior sidewalls and carries them to the base of the unit. Cleaned air is carried through the inner cylinder and discharges to atmosphere or optional afterfilters.

MULTIPLE RATING TABLE

Model	Nominal Airflow Range*		External Static Pressure ("wg)	Inlet Velocity	
	cfm	m ³ /h		fpm	m/min
12	300 - 540	510 - 917	5.6 - 4.1	3580 - 6200	1091.2 - 1889.8
16	860 - 1,200	1,461 - 2,038	7.9 - 4.6	4380 - 6135	1335.0 - 1869.9
20-3	1,250 - 2,000	2,123 - 3,397	7.5 - 3.7	3555 - 5710	1083.6 - 1740.4
20-5	1,500 - 2,500	2,548 - 4,247	11.4 - 5.0	4290 - 7140	1307.6 - 2176.3
24	1,950 - 3,500	3,312 - 5,945	13.4 - 4.4	3580 - 6450	1091.2 - 1966.0
30-10	3,000 - 4,500	5,096 - 7,644	9.9 - 5.0	3820 - 5730	1164.3 - 1746.5
30-15	4,000 - 5,600	6,795 - 9,512	11.0 - 4.9	5100 - 7140	1554.5 - 2176.3
36-20	4,300 - 7,000	7,304 - 11,891	11.4 - 4.9	4015 - 6540	1223.8 - 1993.4
36-25	4,500 - 7,500	7,644 - 12,740	14.9 - 6.3	4210 - 7010	1283.2 - 2136.6
36-30	5,000 - 8,000	8,493 - 13,589	16.1 - 7.1	4670 - 7465	1423.4 - 2275.3
44-40	8,000 - 11,500	13,589 - 19,534	15.1 - 5.5	4530 - 6510	1380.7 - 1984.2
44-50	8,000 - 13,000	13,589 - 22,082	18.8 - 7.0	4530 - 7360	1380.7 - 2243.3

* Based on clean bag filters.

DIMENSIONS & SPECIFICATIONS



Model	Dimensions									
	A		B		C		D-55*		D-CB*	
	in	mm	in	mm	in	mm	in	mm	in	mm
12	12	304.8	55	1397.0	32	812.8	100	2540.0	78	1981.2
16	16	406.4	55	1397.0	36	914.4	108	2743.2	86	2184.4
20-3	20	508.0	55	1397.0	48	1219.2	121	3073.4	114	2895.6
20-5	20	508.0	55	1397.0	48	1219.2	123	3124.2	116	2946.4
24	24	609.6	67	1701.8	55	1397.0	145	3683.0	126	3200.4
30-10	30	762.0	67	1701.8	72	1828.8	162	4114.8	154	3911.6
30-15	30	762.0	67	1701.8	72	1828.8	162	4114.8	154	3911.6
36-20	36	914.4	67	1701.8	85	2159.0	183	4648.2	—	—
36-25	36	914.4	67	1701.8	85	2159.0	186	4724.4	—	—
36-30	36	914.4	67	1701.8	85	2159.0	186	4724.4	—	—
44-40	44	1117.6	—	—	104	2641.6	—	—	—	—
44-50	44	1117.6	—	—	104	2641.6	—	—	—	—

* Typical. May vary based on motor type/size ordered.

Model	Optional Bag Filter Assembly		Motor (hp)		Air Inlet		Air Outlet**		Dust Capacity				Shipping Weight			
	Filter Area		No. of Bag Filters		Inside Diameter				Dust Drawer		Hopper		Standard		With Optional Bag Filter Assembly	
	ft²	m²			in	mm	in	mm	ft²	m²	ft²	m²	lb	kg	lb	kg
12	15	1.4	1	¾	4	101.6	6	152.4	4.8	0.4	12.0	1.1	325	147.4	350	158.8
16	25	2.3	1	2	6	152.4	8	203.2	4.8	0.4	12.0	1.1	390	176.9	410	186.0
20-3	70	6.5	4	3	8	203.2	10	254.0	8.5	0.8	19.5†	1.8	600	272.2	740	335.7
20-5	70	6.5	4	5	8	203.2	10	254.0	8.5	0.8	19.5†	1.8	640	290.3	740	335.7
24	100	9.3	4	7.5	10	254.0	12	304.8	8.5	0.8	37.5†	3.5	750	340.2	850	385.6
30-10	200	18.6	8	10	12	304.8	14	355.6	16.5	1.5	37.5†	3.5	1175	533.0	1400	635.0
30-15	200	18.6	8	15	12	304.8	14	355.6	16.5	1.5	37.5†	3.5	1210	548.8	1486	674.0
36-20	300	27.9	12	20**	14	355.6	16***	406.4	—	—	54.0†	5.0	2000	907.2	2300	1043.3
36-25	300	27.9	12	25**	14	355.6	16***	406.4	—	—	54.0†	5.0	2145	973.0	2445	1109.0
36-30	300	27.9	12	30**	14	355.6	16/18***	406.4	—	—	54.0†	5.0	2165	982.0	2465	1118.1
44-40	600	55.7	24	40**	18	457.2	20	508.0	—	—	103.0	9.6	3150	1428.8	3550	1610.3
44-50	600	55.7	24	50**	18	457.2	20	508.0	—	—	103.0	9.6	3165	1435.6	3565	1617.1

* Based on clean filters.

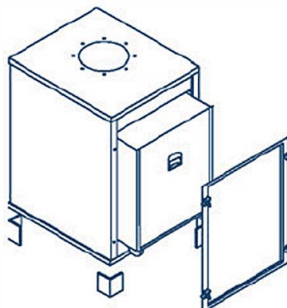
** Model 36-20 and 36-30 available with direct- or belt-drive blowers. Model 36-25 and 44 available with belt-drive blower only.

† Up to 103 ft² (2.92 m²) hopper available.

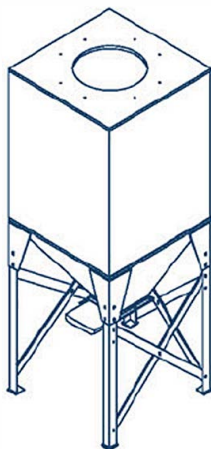
++ Round outlets are available when collector is ordered with optional outlet transition.

+++ Optional round outlet on size 36-20, 36-25 and 36-30 cyclone with belt drive fan has a 16" diameter. For 36 with a direct drive fan, only the 36-30 has an optional round outlet. This has an 18" diameter.

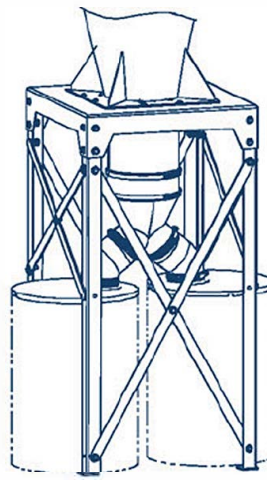
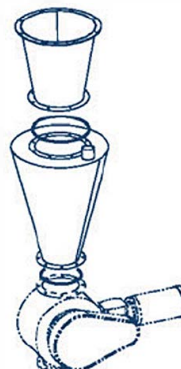
BASE OPTIONS



Cabinet Base



Hopper Base

Two-Drum Style
55-Gallon Drum Base
(optional)Surge Hopper
(optional)

STANDARD FEATURES & AVAILABLE OPTIONS

STANDARD †	OPTIONAL
Inlet assembly	Power pack
55-gallon (208.2-liter) drum base for Models 12 through 36	Explosion-proof motors
TEFC motor with 60 Hz 1 HP and larger are EISA compliant	50 Hz, single phase motors
103 cu. ft. hopper and legs for Model 44	Steel or aluminum fan wheels
208/230/460/60/3 voltages	Hopper base
10-year warranty	Two 55-gallon (208.2-liter) drum base for Models 20, 24, and 30
	Cabinet base for Models 12, 16, 20, 24, and 30
	Surge hopper
	Silencer
	Exhaust accessories
	Attenuator
	Bag filter options
	Bag filter enclosure
	Explosion vent

† Donaldson Torit equipment is designed to IBC guidelines for specific wind speed exposure and seismic spectral acceleration at grade level. Contact your Donaldson Torit representative for detailed information available on the equipment's Spec Control drawings. Equipment may be customized to meet unique, customer-specified site requirements.

Significantly improve the performance of your collector with genuine Donaldson Torit replacement filters and parts.

Call Donaldson Torit at 800-365-1331.

Important Notice

Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, product specifications, availability and data are subject to change without notice, and may vary by region or country.



Donaldson Company, Inc.
Minneapolis, MN
donaldsontorit.com • shop.donaldson.com

North America
Email: donaldsontorit@donaldson.com
Phone: (USA): +1-800-365-1331 • (MX): +1-800-343-36-39

Australasia
Email: marketing.australia@donaldson.com
Phone: +61-2-4350-2000
Toll Free: (AU): +1800-345-837 • (NZ): +0800-743-387

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China
Email: info.cn@donaldson.com
Phone: +86-400-820-1038
Donaldson Europe B.V.B.A.
Email: IAF-europe@donaldson.com
Phone: +32-16-38-3811
India
Email: info.difs@donaldson.com
Phone: +91-124-4807-400 • +18001035018
Japan
Email: jp-ndi.fsw@donaldson.com
Phone: +81-42-540-4112

Korea
Email: iaf-kr@donaldson.com
Phone: +82-2-517-3333
Latinoamerica
Email: IndustrialAir@donaldson.com
Phone: +52-449-300-2442
South Africa
Email: SAMarketing@donaldson.com
Phone: +27-11-997-6000
Southeast Asia
Email: IAFSEA@donaldson.com
Phone: +65-6311-7373

Attachment 2

Donaldson Torit Ultra-Web Cartridge Fact Sheet



ULTRA-WEB® CARTRIDGE

ENGINEERED FOR DUST COLLECTION

- Fine fiber technology ensures longer filter life at a significantly lower pressure drop
- Substrate media features increased rigidity, higher durability, and superior cleanability
- MERV* 15 filtration efficiency rating per ASHRAE 52.2-2007
- Superior particle release due to surface filtration
- Lower pressure drop saves energy
- Longer filter life reduces replacement and maintenance costs
- Lightweight and easy to install
- Flame retardant media available
- Stainless steel construction available



Ultra-Web Cartridge

APPLICATIONS

- Premium performance on extremely fine, dry, and nonfibrous dust
- Durable for more abrasive dust
- Outer liner available for most applications
- Outer liner removed for agglomerative dust applications

THE ULTRA-WEB ADVANTAGE IS CLEANER AIR

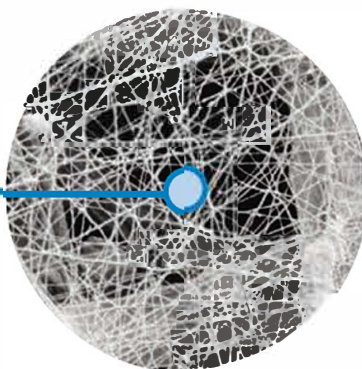
Ultra-Web® is proprietary and made with an electrospinning process that produces a very fine, continuous, resilient fiber of 0.2-0.3 micron in diameter to form a permanent web-like net. This fine fiber "web" with its very fine interfiber spaces is constructed onto tough cellulose substrate media, resulting in:

- A more robust media that captures even submicron dust on the surface
- Better pulse cleaning and lower pressure drop
- Cleaner air, longer filter life, and greater cost savings

SEM IMAGES²

1 micron = 1/25,400 of an inch
(1/1000 of a millimeter)

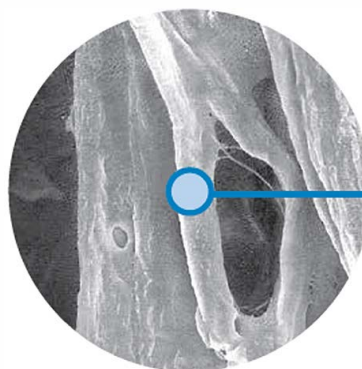
10 micron



Ultra-Web (600x)
Fine Fiber Media

* Refer to Minimum Efficiency Reporting Value on page 4.

10 micron



Cellulose Media (600x)

SPECIFICATIONS

MEDIA COMPOSITION	
Fine Fiber Technology	Durable proprietary synthetic filter media fibers and polymer Mean fiber diameter of 0.2 µm
Substrate	Proprietary blend of cellulose fibers Flame retardant version per UL® Standard 558, TAPPI Standard T 461om-94, and DIN 53438 Part 3

CARTRIDGE CONSTRUCTION	
Standard Construction	Galvanized metal end caps Galvanized expanded metal liner 72% open area Urethane gasket
Options	Stainless steel liner and end caps No outer liner version EPDM gasket

MEDIA COMPATIBILITY DATA	
Temperature Resistance	180°F / 82°C
Moisture Absorption*	Maximum 14% @ 70°F (21°C) and 65% RH
Chemical Tolerance*	Acids→Poor Oxidants→Poor Bases→Fair Solvents→Fair
Abrasion Resistance	Good per TAPPI 476 (Taber Method)

MEDIA EFFICIENCY	
U.S. Efficiency Rating	MERV* 15 per ASHRAE 52.2-2007

* Refer to Minimum Efficiency Reporting Value on page 2.

† Scanning Electron Microscope

CONFIGURATIONS

Collector Models		Filter Area		Pleat Height		Dimensions		Ultra-Web				
		ft²	m²	in	mm	in	mm	Standard	FR	NL	SS	Beaded
AerBooth		170 226	15.8 21.0	1.5 2.0	38.1 50.8	11.74 x 26 12.74 x 26	298.2 x 660.4 323.6 x 660.4	• •	• •	• •	• •	• •
Ambient Air Tubesheets	Cylindrical	226	21.0	2.0	50.8	12.74 x 26	323.6 x 660.4	•	•			
	Coned	260	24	2.0	50.8	12.74 x 15.9 x 26	322.6 x 403.9 x 660.4	•	•	•		
Bin Vent (TBV)		170 226	15.8 21.0	1.5 2.0	38.1 50.8	11.74 x 26 12.74 x 26	298.2 x 660.4 323.6 x 660.4	• •	• •	• •	• •	• •
CF Series		226	21.0	2.0	50.8	12.74 x 26	323.6 x 660.4		•			
CX Series		191 254	17.7 23.6	1.5 2.0	38.1 50.8	12.84 x 26 13.84 x 26	326.1 x 660.4 351.5 x 660.4	• •	• •	• •		• •
Downdraft Bench (DB)		191 254	17.7 23.6	1.5 2.0	38.1 50.8	12.84 x 26 13.84 x 26	326.1 x 660.4 351.5 x 660.4	• •	• •	• •		• •
Torit Downdraft Bench (TDDb)		226	21.0	2.0	50.8	12.74 x 26	323.6 x 660.4		•			
Downflo®(DF)		170 226	15.8 21.0	1.5 2.0	38.1 50.8	11.74 x 26 12.74 x 26	298.2 x 660.4 323.6 x 660.4	• •	• •	• •	• •	• •
Downflo II (DFT)		191 254	17.7 23.6	1.5 2.0	38.1 50.8	12.84 x 26 13.84 x 26	326.1 x 660.4 351.5 x 660.4	• •	• •	• •	• •	• •
Downflo Containment System (DCS)		190	17.7	1.5	38.1	11.4 x 14.4 x 26	289.6 x 365.8 x 660.4	•	•	•	•	
Downflo Oval (DFO)		190	17.7	1.5	38.1	11.4 x 14.4 x 26	289.6 x 365.8 x 660.4	•	•	•	•	
Downflo Evolution (DFE)		254	23.6	2	50.8	13.74 x 13.74 x 26	348.9 x 348.9 x 660.4	•	•	•	•	•
Downflo (SDF)		103	9.6	1.5	38.1	9.2 x 22.3	233.7 x 566.4	•	•			
Downflo WorkStation (DWS)		190	17.7	1.5	38.1	11.4 x 14.4 x 26	289.6 x 365.8 x 660.4	•	•	•	•	
Easy-Trunk™		103	9.6	1.5	38.1	9.2 x 22.3	233.7 x 566.4		•			
Environmental Control Booth™(ECB)		170 226	15.8 21.0	1.5 2.0	38.1 50.8	11.74 x 26 12.74 x 26	298.2 x 660.4 323.6 x 660.4	• •	• •	• •	• •	• •
Mini-Trunk™		72	6.7	1.5	38.1	9.2 x 16	233.7 x 406.4		•			
MTD		170 226	15.8 21.0	1.5 2.0	38.1 50.8	11.74 x 26 12.74 x 26	298.2 x 660.4 323.6 x 660.4	• •	• •	• •	• •	• •
Porta-Trunk™		220	20.4	2.0	50.8	17.6 x 18	447.0 x 457.2		•			
ProBooth™		170 226	15.8 21.0	1.5 2.0	38.1 50.8	11.74 x 26 12.74 x 26	298.2 x 660.4 323.6 x 660.4	• •	• •	• •	• •	• •
TD Large		170 226	15.8 21.0	1.5 2.0	38.1 50.8	11.74 x 26 12.74 x 26	298.2 x 660.4 323.6 x 660.4	• •	• •	• •	• •	• •
TD Small		45 60	4.2 5.5	1.5 2.0	38.1 50.8	7.9 x 16 7.9 x 16	200.7 x 406.4 200.7 x 406.4	• •	• •	• •	• •	
Trunk 2000 (T-2000)		212	19.7	2.0	50.8	13.84 x 22	351.5 x 558.8		•			
WeldAir		103 220	9.6 20.4	2.0 2.0	50.8 50.8	9.2 x 22.3 17.6 x 18	233.7 x 566.4 447.0 x 457.2		• •			
Weld Bench		254	23.6	2.0	50.8	13.84 x 26	351.5 x 660.4		•			

MINIMUM EFFICIENCY REPORTING (MERV)

The Minimum Efficiency Reporting Value (MERV) of this filter cartridge has been determined through independent laboratory testing using ASHRAE 52.2 (2007) test standards. The MERV rating was determined at a face velocity of 118 feet per minute (36.0 meters per minute) and loading up to four inches (101.6 millimeters) water gauge. Actual efficiency of any filter cartridge will vary according to the specific application parameters. Dust concentration, airflow, particle characteristics, and pulse cleaning methods all affect filtration efficiency.

MOISTURE ABSORPTION

Environmental conditions involving combinations of high temperature, corrosive material, and moisture can reduce media strength. Reduction in media strength may compromise cartridge integrity and performance.

CHEMICAL TOLERANCE

A combination of chemicals may alter fiber resistance to the specified performance level. Chemical attack may compromise cartridge integrity and performance.

Significantly improve the performance of your collector with genuine Donaldson Torit replacement filters and parts. **Call Donaldson Torit at 800-365-1331.**

Important Notice

Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, product specifications, availability and data are subject to change without notice, and may vary by region or country.



Donaldson Company, Inc.
Minneapolis, MN
donaldson.com • shop.donaldson.com

North America
Email: donaldson@donaldson.com
Phone: (USA): +1-800-365-1331 • (MX): +1-800-343-3639

Australasia
Email: marketing.australia@donaldson.com
Phone: +61-2-4350-2000
Toll Free: (AU) +1800-345-837 • (NZ) +0800-743-387

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China
Email: info.cn@donaldson.com
Phone: +86-400-820-1038

Donaldson Europe B.V.B.A.
Email: IAF-europe@donaldson.com
Phone: +32-16-38-3811

India
Email: info.difs@donaldson.com
Phone: +91-124-4807-400 • +18001035018

Japan
Email: jp-ndlfsweb@donaldson.com
Phone: +81-42-540-4112

Korea
Email: iaf-kr@donaldson.com
Phone: +82-2-517-3333

Latinoamerica
Email: IndustrialAir@donaldson.com
Phone: +52-449-300-2442

South Africa
Email: SAMarketing@donaldson.com
Phone: +27-11-997-6000

Southeast Asia
Email: IAFSEA@donaldson.com
Phone: +65-6311-7373

Attachment 3

EPA Air Pollution Control Technology Fact Sheet

Typical Industrial Applications:

HEPA and ULPA filters are best applied in situations where high collection efficiency of submicron PM is required, where toxic and/or hazardous PM cannot be cleaned from the filter, or where the PM is difficult to clean from the filter. HEPA and ULPA filters are typically utilized for applications involving chemical, biological, and radioactive PM. HEPA and ULPA filters are installed as the final component in a PM collection system, downstream from other PM collection devices such as electrostatic precipitators or baghouses. (Heumann, 1997)

Common industrial applications of HEPA and ULPA filters are hospital, low-level nuclear, and mixed waste incinerators and nuclear air ventilation and safety systems. In addition, the filters are used in a number of commercial applications and manufacturing processes such as clean rooms, laboratories, food processing, and the manufacture of pharmaceuticals and microelectronics (Osborn, 1989). The filters can be utilized in any application where dust is generated and can be collected and ducted to a central location.

Emission Stream Characteristics:

- a. **Air Flow:** HEPA and ULPA filters are currently limited to low capacity air flow applications. Standard filter packs are factory-built, off the shelf units. They may handle from less than 0.10 up to 1.0 standard cubic meters per second (sm^3/sec) ("hundreds" to 2,000 standard cubic feet per minute (scfm)) (AAF, 2000; Vokes, 1999). HEPA filter systems designed for nuclear applications require higher capacities. For these applications, filter banks, or modules are ducted together in parallel to increase air flow capacity (EPA, 1991). Commercially available modular systems can accommodate air flow rates in the range of 5 to 12 sm^3/sec (5,000 to 40,000 scfm) (AAF, 2000; Vokes, 1999).

Air flow capacity is a function of the resistance, or pressure drop across the filter and particle loading. As the dust cake forms on the filter, the resistance increases, therefore, the air flow rate decreases. Since the filter is not cleaned, the air flow rate continues to decrease as the system operates. After the pressure drop across the filter reaches a point that prevents adequate air flow, the filter must be replaced and disposed. For these reasons, HEPA and ULPA filters are used in applications that have low air flow rates or have low concentrations of PM (Heumann 1997).

- b. **Temperature:** Temperatures are limited by the type of filter media and sealant used in the filter packs. Standard cartridges can accommodate gas temperatures up to about 93°C (200°F). With the appropriate filter media and sealant material, commercial HEPA filters can accept temperatures of up to 200°C (400°F). HEPA filters with ceramic or glass packing mechanical seals can accept temperatures up to 537°C (1000°F). (EPA, 1991)

Spray coolers or dilution air can be used to lower the temperature of the pollutant stream. This prevents the temperature limits of the filter from being exceeded (EPA, 1998b). Lowering the temperature, however, increases the humidity of the pollutant stream. HEPA and ULPA filters can tolerate some humidity. Humidity higher than 95%, however, can cause the filter media to plug, resulting in failure (EPA, 1991). Therefore, the minimum temperature of the pollutant stream must remain above the dew point of any condensable in the stream. The filter and associated ductwork should be insulated and possibly heated if condensation may occur (EPA, 1998b).

- c. **Pollutant Loading:** Typical pollutant loading ranges from 1 to 30 grams per cubic meter (g/m^3) (0.5 to 13 grains per cubic foot (gr/ft^3)) (Novick, et al, 1992). Dust holding capacity compares the weight gain of the filter to the rise in pressure drop during a specific period of

time (air flow volume). Typical inlet dust holding capacity range from 500-1000 g/1000 scfm (Gadish, 1989). As discussed above, the pressure drop across the filter is a function of pollutant loading. HEPA and ULPA filters are best used in applications that have low concentrations of PM, or prohibit cleaning of the filter (Heumann, 1997).

- d. **Other Considerations:** Moisture and corrosives content are the major gas stream characteristics requiring design consideration. As discussed previously, humidity up to 95% is acceptable with the proper filter media, coatings, and filter construction. Filters are available which can accommodate corrosive gas streams with concentrations up to several percent. These filters are constructed of special materials and are generally more expensive. (EPA, 1991)

HEPA and ULPA filters are monitored for pressure drop across the filter media. Once the pressure drop becomes unacceptable, the filter must be replaced. The typical pressure drop for a clean filter is 25 millimeters (mm) of water column (1 inches (in.) of water column). An increase of the pressure drop in the range of 51 to 102 mm of water column (2 to 4 in. of water column) indicates the end of the service life of the filter (EPA, 1991, Burchsted et al, 1979). Newer filters are available which have clean filter pressure drops in the range of 6 to 13 mm of water column (0.25 to 0.5 in. of water column) (Burchsted et al, 1979).

HEPA and ULPA filters are typically operated under pressure of approximately 203 mm of water column (8 in. of water column) High operating pressures may rupture the filter. HEPA filters utilized in the nuclear industry have seismic requirements in addition to the performance characteristics discussed above. (EPA, 1991)

Emission Stream Pretreatment Requirements:

HEPA and ULPA filters require pre-filtering to remove large PM or for dust concentrations greater 0.03 grams per centimeter squared (g/cm^2) (0.06 pounds per foot squared (lbs/ft^2)). Pre-filtering may be performed in several stages. Mechanical collectors, such as cyclones or venturi scrubbers may be required to reduce large diameter PM. Standard baghouse or cartridge filters are required to filter out PM greater than 2.5 μm in diameter. (EPA, 1991)

In high temperature applications, the cost of high temperature-resistant filter designs must be weighed against the cost of cooling the inlet temperature with spray coolers or dilution air (EPA, 1998b).

Cost Information:

The capital cost for a HEPA filter system is given below. The cost estimate assumes a factory-built, off the shelf modular design under typical operating conditions. The filter system is for a nuclear application and includes one test section and a pair of pressure sensors. Auxiliary equipment, such as fans and ductwork, is not included.

The estimate is based on a manufacturer quote for only the purchased equipment cost in 1999 dollars (AAF, 2000). The vendor did not provide operational and maintenance (O&M) cost, annualized cost, and cost effectiveness because they are application specific. The capital cost for HEPA and ULPA filters are significantly lower than for a baghouse, however, the O&M cost tends to be much higher. Requirements such as the frequency of filter replacement, monitoring and testing procedures, maintenance procedures, and waste profiles impact the O&M cost.

Costs are primarily driven by the waste stream volumetric flow rate and pollutant loading. In general, a small unit controlling a low pollutant loading will not be as cost effective as a large unit controlling a high pollutant

loading (EPA, 1998b). HEPA and ULPA filters are currently limited to low flow rate applications. The capital cost range presented is for flow rates of 1.5 m³/s (3,000, scfm) and 19 m³/s (40,000 scfm), respectively.

Pollutants that require an unusually high level of control or that require the filter media, adhesives, or the filter unit to be constructed of special materials, such as stainless steel, will increase the costs of the system. The additional costs for controlling more complex waste streams are not reflected in the estimates given below. (EPA, 1991)

- a. **Capital Cost:** \$6,400 to \$8,500 per sm³/s (\$3 to \$4 per scfm)
- b. **O & M Cost:** Application specific
- c. **Annualized Cost:** Application specific
- d. **Cost Effectiveness:** Application specific

Theory of Operation:

HEPA and ULPA filters generally contain a paper media. Newer filter designs may contain nonwoven media which utilizes recently developed fine fiber technology (INDA, 2000). Generally, the filter media is fabricated of matted glass fiber such as borosilicate microfiber (EPA, 1991). The small fiber diameter and high packing density of both the paper and nonwoven media allow for the efficient collection of submicrom PM (Gaddish, 1989). The waste gas stream is passed through the fibrous filter media causing PM in the gas stream to be collected on the media by sieving and other mechanisms. The dust cake that forms on the filter media from the collected PM can increase collection efficiency (EPA, 1998a).

The filter media is pleated to provide a larger surface area to volume flow rate. For this reason, HEPA and ULPA filters are often referred to as extended media filters. Close pleating, however, can cause the PM to bridge the pleat bottom, reducing the surface area (EPA, 1998a). Corrugated aluminum separators are often employed to prevent the media from collapsing (Heumann, 1997). The pleat depth can vary from 2.5 centimeters (cm) (1 in.) up to 40 cm (16 in.). Pleat spacing is generally between 12 to 16 pleats per in., with certain conditions requiring fewer pleats, 4 to 8 pleats per in. (EPA, 1998a).

The most common designs are a box filter cell and a cylindrical filter cell. In a box cell, the pleated media is placed in a rigid, square frame constructed of wood or metal. The air flows from the front to the back of the filter. Box packs are approximately 60 cm (24 in.) in height and width and 6 to 30 cm (3 to 12 in.) in length (EPA, 1991). The media in a cylindrical filter cell is supported by inner and outer wire frameworks. A metal cap seals the media at one end. Air flows from the outside to the inside of the filter. This allows a higher air flow rate than a box cell since more surface area is exposed (Vokes, 1999). Typical cylindrical packs are 50 centimeters (cm) (20 in.) in diameter and 35 to 60 cm (14 to 24 in.) in length (Vokes, 1999).

Both the box and cylindrical cells seal the media to the frame or cap using polyurethane, epoxy, or other commercially available adhesive. A metal grill protects the media face from damage. The filter cell is mounted to a holding frame using a gasket or fluid seal. The filter is generally mounted on the clean air plenum (EPA, 1991). The filter can be mounted directly in the duct or in a separate housing. HEPA and ULPA filter systems require pre-filtering for large diameter PM. HEPA and ULPA filter systems are generally the final component in a PM removal system (Heumann, 1997).

The HEPA and ULPA filter cells are generally utilized as a disposable-type filter. As discussed previously, when the filter cake buildup results in unacceptable air flow rates, the filters are replaced. In most designs, replacement of the filter cell takes place at the clean air plenum and outside of the housing unit. This reduces the risk of exposure to PM by the maintenance workers. This feature is especially important

for applications where HAPs or toxic PM are being filtered. The Occupational Safety and Health Administration (OSHA) requires special filter replacement procedures, commonly referred to as bag in/bag out procedures, for many HAP or toxic PM applications. (Heumann, 1997)

The operation of the filter may require additional equipment. Pressure sensors at the inlet and outlet may be required to measure the change in the pressure drop across the filter. This not only indicates when the filter should be replaced but also monitors the integrity of the filter system (EPA, 1991). For applications that require a DOP efficiency test to be administered in place, sampling and injection ports and a test apparatus may be required (EPA, 1991). A special fitting may be installed to facilitate bag in/bag out procedures (Vokes, 1999).

Individual HEPA and ULPA filter cells accommodate air flow capacities up to 1.0 sm³/sec (2,000 scfm) (Vokes, 1999). Larger air flow capacities are required for some applications, such as the nuclear industry. To increase capacity, multiple filters are housed in banks or modules which are ducted together. This allows a standard, off the shelf, filter unit to be utilized for a variety of applications and air flow rates (Osborn, 1998). In this type of design, dampers can be used to seal off a portion of the filters for maintenance (Vokes, 1999).

The number of filter cells utilized in a particular system is determined by the air-to-cloth ratio, or the ratio of volumetric air flow to cloth area. The selection of air-to-cloth ratio is based on the particulate loading characteristics and the pressure drop across the filter media. Practical application of fibrous media filters requires the use of large media areas to minimize the pressure drop across the filter (EPA 1998a). The paper and nonwoven filter media used in HEPA and ULPA filters have a larger pressure drop across the filter than the woven fabrics used in bags. For this reason, HEPA and ULPA filters are utilized at lower airflow rates and lower particulate loadings than baghouse designs. As discussed previously, once the air flow rate through the filter system decreases to an unacceptable point, the filter must be replaced (Heumann, 1997).

Operating conditions are important determinants of the choice of materials used in HEPA and ULPA filter cells. Pollutant streams with high operating temperatures, high humidity, or corrosives require special filter media, sealant, materials, and coatings. These special materials increase the cost of the system. (EPA, 1991).

HEPA and ULPA filters are generally not cleaned. A dynamic cleaning system may result in the filter not maintaining its rated efficiency. Mechanical stresses caused by air impingement and vibration from the cleaning system may cause leakage (Heumann, 1997).

Advantages:

HEPA and ULPA filters are specifically designed for the collection of submicron PM at high collection efficiencies. They are best utilized in applications with a low flow rate and low pollutant concentration. Filter outlet air is very clean and may be recirculated within the plant, in many cases (AWMA, 1992). They are not sensitive to minor fluctuations in gas stream conditions (Heumann, 1997). Corrosion and rusting of components are usually not problems. Operation is relatively simple. Unlike electrostatic precipitators, HEPA and ULPA filter systems do not require the use of high voltage, therefore, flammable dust may be collected with proper care (AWMA, 1992). Filters are available for a range of dimensions and operating conditions. Commercial filter systems and housings are available in several types of configurations to suit a variety of installation and operation requirements. These systems have many built in features such as testing and monitoring equipment (AAF, 2000; Vokes, 1999).

Disadvantages:

The paper and nonwoven media used in HEPA and ULPA filters have a significantly higher resistance than the woven fabrics that are used in bag filters. The high efficiencies of HEPA and ULPA filters require that the integrity of the filter seals be maintained. The filter media is subject to physical damage from mechanical stress (Heumann, 1997). Temperatures in excess of 95°C (200°F) or corrosive pollutant streams require the use of special materials in the filter, which are more expensive (EPA, 1991). Concentrations of some dusts in the filter housing may represent an explosion hazard if a spark is accidentally admitted. Filter media can burn if readily oxidizable dust is being collected (AWMA, 1992). HEPA and ULPA filter systems require high maintenance and frequent filter replacement. Filter life may be shortened in the presence of high temperatures and acid or alkaline particulates or gas constituents. High flow rates or dust loads will also decrease the operational life of the filter. HEPA and ULPA filters cannot be operated in moist environments. Hygroscopic materials, condensation of moisture, or tarry adhesive components may cause plugging of the filter media (EPA, 1991).

A specific disadvantage of HEPA and ULPA units is that they may generate a high volume waste product with a low density of pollutant. For HAP applications and chemical, biological, or radioactive toxic PM applications, the filters must be disposed of as hazardous waste. The waste is composed of the wood or metal frames, organic binders and gaskets, glass fiber media, and hazardous contaminants. (EPA, 1991).

Other Considerations:

HEPA and ULPA filters are useful for collecting particles with resistivities either too low or too high for collection with electrostatic precipitators (AWMA, 1992). Unlike baghouses which require workers to enter the collector to replace bags, HEPA and ULPA filters systems are designed to replace filters outside the collector housing. This makes them ideal for applications involving HAPs or toxic PM. The collected PM is tightly adhered to the filter media for subsequent disposal. Bag in/bag out procedures that may be required by OSHA are easily performed with the filters (Heumann, 1997).

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Air Dispersion Modeling Report

Minor Permit Amendment

Prepared for:



Reliable Silver Corporation
5941 Midway Park Boulevard NE
Albuquerque, NM 87109

Prepared by:



INTERA Incorporated
2440 Louisiana Boulevard NE Suite 700
Albuquerque, NM 87110

APRIL 2026

Table of Contents

1.0	Applicant and Consultant Information	1
2.0	Facility and Operations Description	2
3.0	Modeling Requirements	4
4.0	Modeling Details.....	5
4.1	Point Sources.....	5
4.1.1	MikroPul Pulsaire Baghouse.....	5
4.1.2	North Stack	5
4.1.3	Emergency Generator.....	5
4.1.4	Dust Collector 1	6
4.1.5	Dust Collector 5	6
4.1.6	Dust Collector 6	6
4.1.7	Dust Collector 11.....	6
4.1.8	Belt Annealing Furnace	7
4.2	Volume Sources	7
4.2.1	Proposed Thermal Spray System.....	7
4.3	Operational Flexibility	7
4.4	NO _x Considerations.....	7
4.5	Background Concentrations	8
4.6	Meteorological Data.....	9
4.7	Receptor Design	9
4.8	Terrain Data	9
4.9	Building Downwash.....	9
4.10	Analysis Approach.....	10
5.0	Modeling Files Description	14
6.0	Modeling Results	15
7.0	Summary / Conclusions.....	28

List of Figures

Figure 1.	Plot Plan.....	3
Figure 2.	NO ₂ Annual SIL Plot.	18
Figure 3.	NO ₂ 1-Hour SIL Plot.	19
Figure 4.	NO ₂ Receptors That Experienced an Exceedance of the 1-Hour SIL.	20
Figure 5.	NO ₂ 1-Hour CIA Plot.	21
Figure 6.	NO ₂ Annual CIA Plot.	22
Figure 7.	PM ₁₀ 24-Hour SIL Plot.....	23
Figure 8.	PM _{2.5} 24-Hour SIL Plot.....	24
Figure 9.	PM _{2.5} 24-Hour CIA Plot.	25
Figure 10.	PM _{2.5} Annual SIL and CIA Plot.	26
Figure 11.	SO ₂ 1-Hour SIL Plot.....	27

List of Tables

Table 1.	Site and Applicant Information.....	1
Table 2.	NAAQS and NMAAQs to Be Modeled.	4
Table 3.	In-Stack Ratio Values.....	8
Table 4.	Del Norte and Jefferson Monitor Background Values.	8
Table 5.	Building Dimensions.....	9
Table 6.	Cumulative Impact Analysis Design Concentration.....	10
Table 7.	Modeled Emission Rates and Release Characteristics.	12
Table 8.	Modeling Files Summary.....	14
Table 9.	SIL and CIA Analysis Outputs.....	16

Acronyms and Abbreviations

AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
ATC	Authority to Construct
BPIPPRM	Building Profile Input Program for PRIME
CIA	Cumulative Impact Analysis
CO	carbon monoxide
COA	City of Albuquerque
COA AQP	City of Albuquerque Air Quality Program
COA AQP Guidelines	City of Albuquerque Environmental Health Department Air Quality Program Air Dispersion Modeling Guidelines for Air Quality Permitting, Revised May 2024
GLC _{max}	maximum ground level concentration
H ₂ S	hydrogen sulfide
INTERA	INTERA Incorporated
KABQ	Albuquerque International Sunport
ISR	in-stack ratio
Materion	Materion Advanced Materials Technologies and Services Corporation
NAAQS	National Ambient Air Quality Standards
NED	National Elevation Dataset
NESHAP	National Emission Standards for Hazardous Air Pollutants
NMAAQs	New Mexico Ambient Air Quality Standards
NMED Guidelines	New Mexico Environment Department New Mexico Air Quality Bureau Air Dispersion Modeling Guidelines, Revised June 2024
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
O ₃	ozone
PM	particulate matter
PM ₁₀	particulate matter with an aerodynamic diameter equal to or less than 10 microns
PM _{2.5}	particulate matter with an aerodynamic diameter equal to or less than 2.5 microns
PNM	Public Service Company of New Mexico
ppm	parts per million
PSD	Prevention of Significant Deterioration
SIL	Significant Impact Level
SO ₂	sulfur dioxide
SO _x	sulfur oxides
tpy	tons per year

1.0 Applicant and Consultant Information

The general information for identifying the site and applicant is provided in Table 1. Reliable Silver Corporation (RSC) is solely authorized to emit air pollutants via Minor NSR Permit #1962-M2-AR.

Table 1. Site and Applicant Information.

Stakeholder	Business Information	Contact Name	Phone Number	Email Address
Applicant	Reliable Silver Corporation	Jayson Carruth	505-948-8595	jcarruth@reliablesilver.com
Modeling Consultant	INTERA Incorporated	Thomas Warnack	512-425-2060	twarnack@intera.com

2.0 Facility and Operations Description

This modeling report is being submitted in support of RSC's application to amend its minor New Source Review (NSR) Air Quality Construction Permit #1962-M2-2AR; this permit authorizes emissions from RSC's North facility. The permit was last amended and issued by the City of Albuquerque (COA) Environmental Health Department Air Quality Program (COA AQP) in June 2020 to Materion Advanced Materials Technologies and Services Corporation (Materion). In 2024, the Materion site was acquired by RSC; a transfer of permit #1962-M2-2AR was conducted in November 2024, and the permit is currently issued to RSC. The current owner (RSC) is now applying to amend the permit to accommodate the construction and operation of a new thermal wire spray system. During a project kickoff meeting between RSC, INTERA Incorporated (INTERA), and the COA AQP, the COA AQP team determined that this project requires sitewide air dispersion modeling. This modeling effort demonstrates that the project does not contribute to an exceedance of the applicable National Ambient Air Quality Standards (NAAQS) or New Mexico Ambient Air Quality Standards (NMAAQs).

INTERA will conduct the modeling analysis for the site on behalf of RSC in accordance with the COA Environmental Health Department Air Quality Program Air Dispersion Modeling Guidelines for Air Quality Permitting, Revised May 2024 (COA AQP Guidelines), and when appropriate, the New Mexico Environment Department New Mexico Air Quality Bureau Air Dispersion Modeling Guidelines, Revised July 2024 (NMED Guidelines).

The site is located at 5941 Midway Park Boulevard NE, Albuquerque, NM 87109; RSC intends to conduct operations at this location indefinitely. A plot plan detailing the site layout is included as **Figure 1**.

Figure 1. Plot Plan.



S:\AR\SLVC\0003 AMEND\CAD\SLVC M003 AMED_001 Plot Plan Fig 1.dwg

3.0 Modeling Requirements

The air dispersion model will predict the ground level concentrations for all criteria pollutants against each applicable Significant Impact Level (SIL), NAAQS, or NMAAQs, as appropriate. Table 2 outlines the specific standards to be modeled according to NMED Guidelines, Tables 18 and 19.

Table 2. NAAQS and NMAAQs to Be Modeled.

Criteria Pollutant	Averaging Time(s)	SIL ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)	NMAAQs ($\mu\text{g}/\text{m}^3$)
NO ₂	1-Hour	7.52	188.03	-
NO ₂	Annual	1.0	-	94.02
SO ₂	1-Hour	7.8	196.4	-
PM ₁₀	24-Hour	5	150	-
PM _{2.5}	24-Hour	1.2	35	-
PM _{2.5}	Annual	0.13	9	-

Notes:

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

NAAQS = National Ambient Air Quality Standards

NMAAQs = New Mexico Ambient Air Quality Standards

NO₂ = nitrogen dioxide

PM_{2.5} = particulate matter with an aerodynamic diameter equal to or less than 2.5 microns

PM₁₀ = particulate matter with an aerodynamic diameter equal to or less than 10 microns

SIL = Significant Impact Level

SO₂ = sulfur dioxide

Lead, hydrogen sulfide (H₂S), and ozone (O₃) are not included in the model, as RSC does not propose to emit lead or H₂S, and O₃ is only modeled regionally and is not required for this project. Carbon monoxide (CO) is not modeled. The results from a previous sitewide CO modeling demonstration showed that impacts were below the SIL. A modeling waiver was requested as part of the modeling protocol submitted in January 2026 and accepted by the COA AQP. The site is not subject to any New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAP) that affect the approach to modeling. Further, this site does not trigger the Prevention of Significant Deterioration (PSD) applicability threshold for any criteria pollutant.

4.0 Modeling Details

The latest version of the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD, v24142) was utilized to run the air dispersion simulations. Emission generating sources, changes from previous modeling efforts, release characteristics, modeling inputs, and modeling applicability are discussed in this section. In general, default regulatory options will be utilized for this effort. It is also noted that sources whose releases are characterized as “ambient” temperature are modeled at 0 degrees Kelvin as a conservative measure to eliminate the effects of plume buoyancy.

4.1 Point Sources

The emission sources discussed in this section are best characterized as point sources, or units with emissions that are routed through a stationary stack or vent with an upward velocity.

4.1.1 MikroPul Pulsaire Baghouse

The MikroPul Pulsaire Baghouse (BH-1) is a control device that removes particulate matter (PM) entrained in waste gas streams. This system utilizes a diffuser that distributes the exhaust from a high-velocity stream into the wider baghouse chamber, which slows the stream significantly. This velocity decrease induces gravitational fallout of heavier dust particles. The baghouse chamber is filled with long cylindrical filter bags, which capture any lighter dust particles that remain. These bags are periodically blasted with pulses of air to clean the filters and induce dropout of the lighter particles. This system controls particulate emissions from the melting furnaces (AG1 and AG2), induction furnaces (IF1 and IF2), and the continuous casting furnace (CC3). Note that IF2 serves as a backup unit to IF1 and is only in operation during times when IF1 is not operational; emissions are presented for one unit in operation, as permitted. Stack temperature and release velocity from the stack exiting the baghouse utilize the stack characteristics provided in a technical revision application, submitted in 2016 for permit #1962-M1. A range of stack temperatures is provided in the current permit for this stack, and the lower temperature will be used as a conservative measure. Stack height and diameter are modified according to input from RSC personnel. This source is modeled as a capped stack, and the “POINTCAP” option is utilized in AERMOD for this source.

4.1.2 North Stack

The 2013 model depicted emissions from the Belt Annealing Furnace (A1) being routed to the North Stack. As the North Stack has been decommissioned and is no longer in use, this emission point has been removed from the model.

4.1.3 Emergency Generator

The emergency generator unit is considered an emergency use engine. It is permitted for 500 hours of operation per year and backs up site power, which is otherwise provided by the Public Service Company of New Mexico (PNM). As such, the emergency engine is exempt from modeling according to COA AQP Guidelines under the section titled “Modeling Waivers.”

4.1.4 Dust Collector 1

Emissions from the Finishing Process (PS-02) and Strip/Grit/Blast/Bond Coat operations (PS-03, PS-04, PS-05, PS-06) are all routed to Dust Collector 1, with an emission point identified in the permit and air dispersion model as DC-01. The current permit and previous modeling efforts identified that PS-02 emissions were routed to a separate dust collector known as Dust Collector 2 (DC-02); however, these emissions are now routed to DC-01, as reflected in the model. Release characteristics from the downstream stack exiting DC-01 will retain stack temperature and stack velocity values provided in a technical revision permit application submitted in 2016 for permit #1962-M1. The stack height and diameter are modified according to input from RSC personnel. This stack is modeled as a vertical stack with an upward velocity as confirmed by RSC personnel.

4.1.5 Dust Collector 5

Emissions from an existing thermal spray operation (PS-01) are routed to Dust Collector 5, whose emission point is identified in the permit and air dispersion model as DC-05. Release characteristics from the stack exiting the dust collector retain stack temperature and stack velocity values provided in a technical revision permit application submitted in 2016 for permit #1962-M1. The stack height and diameter are modified according to input from RSC personnel. This stack is modeled as a vertical stack with an upward velocity as confirmed by RSC personnel.

4.1.6 Dust Collector 6

Emissions from an existing thermal spray operation (PS-07) are routed to Dust Collector 6, whose emission point is identified in the permit and air dispersion model as DC-06. The stack height and diameter are modified according to input from RSC personnel. It is assumed that Dust Collector 6 releases emissions at ambient temperature. This stack is modeled as a vertical stack with an upward velocity as confirmed by RSC personnel. This source has a rain cap, is modeled as a capped stack, and the "POINTCAP" option is utilized for this source.

4.1.7 Dust Collector 11

Emissions from the existing form spray process (FS-01) are routed to Dust Collector 11, whose emission point is identified in the permit and air dispersion model as DC-11. Release characteristics from the dust collector will retain the temperature value provided in a technical revision permit application submitted in 2016 for permit #1962-M1. RSC personnel measured the length and width of the rectangular release area, and the equivalent diameter calculation is utilized to determine the stack diameter per COA AQP Guidelines:

$$D_{eq} = 2 \times \sqrt{\frac{L \times W}{\pi}}$$

The equivalent diameter was found to be larger than the current representation in the permit; thus, assuming a consistent volumetric flow, an updated (lower) exit velocity is modeled. RSC personnel also confirmed that these emissions are released downward from the filter. The source is modeled as a

capped vertical source based on feedback from the COA AQP, who cited guidance titled “Stack and Vent Modeling Guidance” prepared by the Iowa Department of Natural Resources in 2022.

4.1.8 Belt Annealing Furnace

The existing Belt Annealing Furnace (A1) previously routed its emissions to the site’s North Stack. As discussed in **Section 4.1.2**, this stack has since been decommissioned. Emissions are now emitted directly above the belt annealing furnace through a roof stack penetration. The emissions from this unit are conveyed through the penetration via the motive force provided by the belt annealing furnace’s combustion air fan. The point source characteristics for this stack were provided by RSC personnel. The stack has a rain cap cover, and the “POINTCAP” option is utilized in AERMOD for this source.

4.2 Volume Sources

The sources included within this section are those that are best characterized as volume sources, or emissions generating units whose emissions disperse three-dimensionally with no upward velocity of the plume due to momentum or buoyancy.

4.2.1 Proposed Thermal Spray System

The proposed thermal spray system is contained within the RSC building and routes waste gas emissions to a series of cyclone filters and Donaldson Ultra-Web filters before exhausting locally inside the building. This source will be modeled as a volume source on top of the RSC building, directly above the operation location. It is assumed that the emissions generated from this process are ultimately released from general building ventilation penetrations in the building’s roof. The release height is equivalent to the building height. The dimension defining the volume source’s width is the area encapsulating the two filtering trains located inside the RSC building. The initial lateral dimension is defined as the side length divided by 3. The initial vertical dimension for an elevated release on a building is defined as the building height divided by 2.15. The volume source will be modeled with identifier “TS.”

4.3 Operational Flexibility

The model will utilize hourly emission factors commensurate with the site’s actual operating philosophy. As such, each source will be modeled as operational (emission factor of 1) from 5:00 a.m. to 10:00 p.m. and non-operational (emission factor of 0) otherwise. Equipment for this site is considered fixed and will not be modeled as if it could be moved to various locations within the site. RSC’s equipment is generally located within the building, or in fixed emission points near the building. As such, there are no storage piles, bins, or other equipment that require setback limitations or require transient location considerations.

4.4 NO_x Considerations

The model will follow the Tier 3 nitrogen dioxide (NO₂) consideration described in the COA AQP Guidelines. Specifically, the Plume Volume Molar Ratio Method option is utilized. Tier 3 is the least conservative condition for assessing ground level NO₂ impacts, requires in-stack ratio (ISR) assumptions, and requires O₃ data that is temporally paired with meteorological data. The temporally paired O₃ data

is provided from the COA AQP website and will be utilized for the model. As per the guidance in the readme file from the COA AQP website, the Del Norte O₃ data will be utilized since this site is north of Central Avenue. It is understood that the data is given in units of parts per million (ppm). An equilibrium ratio of 0.9 will be utilized and all in-stack ratio values for RSC sources will be selected according to COA AQP Guidelines as summarized in Table 3.

Table 3. In-Stack Ratio Values.

Unit #	Source Type	In-Stack Ratio Value
AG1	Other source ISR / Other sources at facility seeking permit	0.5
AG2	Other source ISR / Other sources at facility seeking permit	0.5
IF1	Other source ISR / Other sources at facility seeking permit	0.5
IF2	Other source ISR / Other sources at facility seeking permit	0.5
A1	Other source ISR / Other sources at facility seeking permit	0.5
PS-05	Other source ISR / Other sources at facility seeking permit	0.5

4.5 Background Concentrations

Background concentrations were provided by COA Air Quality staff for the Del Norte and Jefferson monitors and are current as of March 20, 2026. Based on COA guidance, the Jefferson monitor provides appropriate background concentration values for particulate matter with an aerodynamic diameter equal to or less than 2.5 microns (PM₁₀) and particulate matter with an aerodynamic diameter equal to or less than 2.5 microns (PM_{2.5}), whereas the Del Norte background concentration values are appropriate for all other criteria pollutants. The selected background concentrations are summarized in Table 4.

Table 4. Del Norte and Jefferson Monitor Background Values.

Pollutant	Monitor	Averaging Time	Background Concentration (µg/m ³)
NO ₂	Del Norte	1-Hour	83.1
NO ₂	Del Norte	Annual	18
SO ₂	Del Norte	1-Hour	13.1
PM ₁₀	Jefferson	24-Hour	39.2
PM _{2.5}	Jefferson	24-Hour	19.5
PM _{2.5}	Jefferson	Annual	7.5

Notes:

µg/m³ = micrograms per cubic meter

NO₂ = nitrogen dioxide

PM_{2.5} = particulate matter with an aerodynamic diameter equal to or less than 2.5 microns

PM₁₀ = particulate matter with an aerodynamic diameter equal to or less than 10 microns

SO₂ = sulfur dioxide

4.6 Meteorological Data

Meteorological data was obtained from the COA Air Dispersion website.¹ Specifically, the five-year data set from 2014–2018 for the Albuquerque International Sunport (KABQ) airport was used. Because this meteorological data is collected offsite, all five years of meteorological data will be used per COA AQP Guidelines.

4.7 Receptor Design

The receptor design will be a fenceline-following grid prepared according to COA AQP Guidelines. The receptor grid will start at the fenceline with receptors modeled along the entire fenceline and spaced at 25 meters. In addition, receptors will be spaced every 25 meters within the remaining site boundary outside the fenceline (along the eastern portion of the RSC site). Beyond the site fenceline, a receptor grid will be created with receptors that are spaced 50 meters apart up to 250 meters away from the fenceline. The predicted maximum impact is detected within this designed grid, and thus, an extended grid beyond 250 meters was not created.

4.8 Terrain Data

Elevations for receptors and emissions sources are utilized as per COA AQP guidance. The National Elevation Dataset (NED) 1-arc-second resolution files are downloaded for use in this model. The current version of AERMAP (v24142) terrain preprocessor are used to identify the elevations of the sources of emissions and the receptors for use in the AERMOD input files.

4.9 Building Downwash

Building downwash is applied to this model using the Building Profile Input Program for PRIME (BPIPPRM). The inputs to BPIPPRM are the RSC building, the pumphouse located on the southwest side of the RSC building, the neighbor's building on the adjacent plot to the north, and the building owned by RXO on the adjacent plot to the south. Location, width, and length of each building are determined from overhead imaging. Building heights are confirmed by RSC personnel. The northern building and the RXO building are both included in the model as they are both within 5L of RSC's point sources, where L represents the lesser of the height or the projected width of the structure. Building dimensions are summarized in Table 5.

Table 5. Building Dimensions.

Building	Model ID	Height (m)	Tiers
RSC Building	MAINBLDG	10.36	1
RSC Pumphouse	PUMPHOUSE	3.05	1
Northern Building	BLD_5	9.14	1
RXO Building	RXO_BLDG	9.14	1

¹ <https://www.cabq.gov/airquality/air-quality-permits/dispersion-modeling-guidelines>

4.10 Analysis Approach

The approach for this modeling effort is to conduct a refined model using AERMOD. The first step was to conduct a SIL analysis. Because this modeling assessment was requested by the COA AQP due to the lack of a previous sitewide model, all permitted sources (unless exempt as described in Section 4.1.3) will be modeled at this step. The highest first high (H1H) value observed in the receptor grid for each pollutant for each short-term averaging time is compared to the documented SIL value provided in Table 2. Similarly, the highest annual average outputs will be compared to the applicable annual SIL. Those criteria pollutants whose maximum ground level concentration (GLC_{max}) value is less than the applicable SIL for each averaging time have completed the analysis. Those criteria pollutants whose GLC_{max} value is greater than the applicable SIL for each averaging time continued to a Cumulative Impact Analysis (CIA).

The CIA will include sitewide modeling of a pollutant at the proposed rates. The design values from the AERMOD output files are selected according to NMED Guidelines Section 2.6 and are summarized in Table 6.

Table 6. Cumulative Impact Analysis Design Concentration.

Modeled Pollutant	Averaging Period	Basis
NO ₂	1-Hour	H8H (98 th percentile)
NO ₂	Annual	Highest Annual Average
SO ₂	1-Hour	H4H (99 th percentile)
PM ₁₀	24-Hour	H6H ²
PM _{2.5}	24-Hour	H8H (98 th percentile)
PM _{2.5}	Annual	Highest Annual Average

Notes:

H4H = highest fourth high

H6H = highest sixth high

H8H = highest eighth high

NO₂ = nitrogen dioxide

PM_{2.5} = particulate matter with an aerodynamic diameter equal to or less than 2.5 microns

PM₁₀ = particulate matter with an aerodynamic diameter equal to or less than 10 microns

SO₂ = sulfur dioxide

Emissions of nitrogen oxides (NO_x) and sulfur oxides (SO_x) are not proposed to be greater than 40 tons per year (tpy); primary PM_{2.5} is not proposed to be emitted above 10 tpy. Thus, secondary PM_{2.5} formation from NO_x and SO₂ are not considered or added to the overall PM_{2.5} impact.

For the CIA, all receptors that incurred an exceedance of the SIL constitute a receptor that is further analyzed at the CIA step. Those receptors that did not exceed the SIL are screened out of further analysis. Background concentration values and surrounding source modeled impact contributions are added to the ground level concentrations impacts, as appropriate. Correspondence with the COA AQP confirmed that for PM₁₀ and PM_{2.5}, background concentrations are sufficient to analyze total impact; the

² NMED Guidelines Section 2.6.7.1: When n years are modeled, the (n+1)th highest concentration over the n-year period is the design value, since this represents an average or expected exceedance rate of one per year.

Jefferson Monitor is close to the RSC building and should account for surrounding sources. Conversely, for all other criteria pollutants at the CIA step, background concentrations are added to RSC contributions and surrounding source contributions. The total impact is compared to the NAAQS or NMAAQS, as appropriate, to ascertain whether an exceedance of the standard is incurred.

Table 7. Modeled Emission Rates and Release Characteristics.

Reliable Silver Sources														
Point Source Description	UTM Coordinate (X)	UTM Coordinate (Y)	EPNs	Emission Rate				Capped?	Stack Height (m)	Stack Temperature (K)	Release Length (in)	Release Width (in)	Stack Velocity (m/s)	Stack Diameter (m)
				NO _x (lb/hr)	SO ₂ (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)							
AG1 Melting Furnace	353859.20	3890794.12	BH1	3.00E-02	2.00E-04	2.00E-03	2.00E-03	Y	11.50	339			18.6	0.508
AG2 Melting Furnace				3.00E-02	2.00E-04	2.00E-03	2.00E-03	Y	11.50	339			18.6	0.508
IF1 Induction Furnace				8.00E-03	1.00E-04	6.00E-04	6.00E-04	Y	11.50	339			18.6	0.508
IF2 Induction Furnace									11.50	339			18.6	0.508
CC3 Continuous Casting Furnace				0.00E+00	0.00E+00	6.00E-04	6.00E-04	Y	11.50	339			18.6	0.508
Total					BH1 Total	6.80E-02	5.00E-04	5.20E-03	5.20E-03	Y	11.50	339		
FS-01 Form Spray Process	353894.07	3890844.34	DC-11	0.00E+00	0.00E+00	1.00E-02	1.00E-02	Y	2.01	0	20	6	13.0	0.314
A1 Belt Annealing Furnace	353864.64	3890776.15	A1	3.90E-01	2.00E-03	3.00E-02	3.00E-02	Y	11.58	422			12.0	0.914
PS-02 Finishing Process	353860.06	3890839.47	DC-01	0.00E+00	0.00E+00	3.00E-05	3.00E-05	N	2.74	0			3.7	0.609
PS-05 Strip, Grit, Blast, and Bond Coat				1.00E-03	6.00E-05	9.00E-05	9.00E-05	N	2.74	0			3.7	0.609
PS-03, PS-04, PS-06 Strip, Grit, Blast, and Bond Coat				0.00E+00	0.00E+00	6.00E-03	6.00E-03	N	2.74	0			3.7	0.609
Total					DC-01 Total	1.00E-03	6.00E-05	6.12E-03	6.12E-03	N	2.74	0		
PS-01 Thermal Spray	353859.85	3890842.61	DC-05	0.00E+00	0.00E+00	1.00E-02	1.00E-02	N	2.18	303			15.5	0.609
PS-07 Thermal Spray	353860.01	3890835.99	DC-06	0.00E+00	0.00E+00	1.00E-02	1.00E-02	Y	11.5	0			3.1	0.66
Volume Source Description	UTM Coordinate (X)	UTM Coordinate (Y)	EPNs	Emission Rate				Release Height (m)	InitialLat (m)	Initial Vertical (m)				
				NO _x (lb/hr)	SO ₂ (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)							
New Thermal Spray Application	353874.04	3890778.18	TS_VOL	3.76E-03	1.07E-02	1.07E-03	1.07E-03	10.36	1.17	4.82				

Surrounding Sources											
Site / Source	UTM Coordinate (X)	UTM Coordinate (Y)	EPNs	Emission Rate	Horizontal?	Capped?	Stack Height (m)	Stack Temperature (K)	Stack Velocity (m/s)	Stack Diameter (m)	
				NO _x (lb/hr)							
Mega Corp / Generator	353038.06	3890776.54	MEGA_GEN	1.09E+01	Y	N	2.44	700	22.0	0.122	
Vulcan Osuna / HMA Baghouse Stack Unit #1	353231	3890478	HMASTK	2.75E+01	N	N	9.37	380	13.7	1.730	
Vulcan Osuna / HMA Asphalt Cement Heater Unit #16	353248	3890453	HMAHEAT	3.70E-01	N	N	6.10	700	18.3	0.152	
Vulcan RAP / RAP Plant Generator (Unit 27)	353542	3890701	RAP_GEN	3.53E+01	N	N	3.05	792	24.8	0.200	
Roadrunner CBP / Concrete Plant Water Heater	353275.38	3890786.31	RRCBPWHR	3.90E-01	N	N	2.00	500	5.0	0.076	
Roadrunner CBP / Hot Water Heater	353271.8	3890757.56	RRCBPHWH	6.99E-01	N	N	2.00	500	5.0	0.076	
PNM Reeves / Unit 1 Steam Boiler	354193	3893267	PNM_S101	1.82E+02	N	N	36.09	413	15.1	2.743	
PNM Reeves / Unit 2 Steam Boiler	354193	3893253	PNM_S102	1.65E+02	N	N	36.09	400	15.1	2.743	
PNM Reeves / Unit 3 Steam Boiler	354193	3893223	PNM_S103	6.39E+02	N	N	36.09	380	17.2	3.048	

Surrounding Sources										
Site / Source	UTM Coordinate (X)	UTM Coordinate (Y)	EPNs	Emission Rate	Horizontal?	Capped?	Stack Height (m)	Stack Temperature (K)	Stack Velocity (m/s)	Stack Diameter (m)
				NO _x (lb/hr)						
Materion Refinery / Baghouse for the Rotary Furnace	354359	3891884.6	MR_BH2	4.50E-01	N	N	7.50	422	15.7	0.518
Materion Refinery / Baghouse for Gold Smelters and Electric Furnace I-3	354388.1	3891874.5	MR_BH3	2.30E-02	N	N	5.70	322	4.4	0.975
Materion Refinery / Baghouse for Gold Smelters and Electric Furnace I-3	354388.1	3891868.7	MR_BH4	2.30E-02	N	N	7.50	322	15.7	0.518
Materion Refinery / Baghouse for Silver Smelters	354393.6	3891865.6	MR_BH5	5.29E+00	N	N	12.19	366	13.7	0.914
Materion Refinery / Afterburner	354348.6	3891880.5	MR_D3	1.15E-01	N	N	9.88	1144	12.9	0.305
Materion Refinery / Afterburner	354359	3891879.2	MR_D4	3.50E-02	N	N	8.72	1144	7.7	0.396
Materion Refinery / Scrubbers for Electrolytic Cells	354377.1	3891848.3	MR_SC1	1.78E-01	N	N	7.35	0	10.6	0.914
Materion Refinery / Scrubbers for Electrolytic Cells	354377.5	3891862.6	MR_SC2	8.89E-01	N	N	6.80	0	3.5	0.305
Materion Refinery / Scrubbers for Electrolytic Cells	354388.4	3891857.9	MR_SC3	5.30E-02	N	N	5.15	0	8.1	0.610
Materion Refinery / Laboratory Hood	354363.4	3891863	MR_L1	1.10E-01	N	N	5.21	0	22.2	0.203
Materion Refinery / Laboratory Hood	354364.9	3891863	MR_L2	1.10E-01	N	N	6.12	0	22.2	0.203
Materion Refinery / Laboratory Hood	354367.8	3891863.3	MR_L3	1.10E-01	N	N	7.19	0	22.2	0.203
Curia / NG Boiler Unit 5	354571.3	3890508.8	CURIA_B5	7.99E-01	N	Y	12.19	453	7.9	0.433
Curia / NG Boiler Unit 6	354571.8	3890508.5	CURIA_B6	3.60E-01	N	Y	11.64	510	8.7	0.381
American Gypsum / Kettle #1 Combustion Stack	354766	3893283	AG_1A	2.85E+00	N	N	26.09	672	7.2	0.914
American Gypsum / Kettle #2 Combustion Stack	354760	3893283	AG_2A	1.90E+00	N	N	26.09	672	5.0	0.914
American Gypsum / Kettle #3 Combustion Stack	354753	3893283	AG_3A	1.90E+00	N	N	26.09	672	7.2	0.914
American Gypsum / Kettle #4 Combustion Stack	354748	3893283	AG_4A	2.85E+00	N	N	26.09	672	7.2	0.914
American Gypsum / Raymond Mill #1	354760	3893284	AG_6	4.90E-01	N	N	25.05	333	16.0	0.549
American Gypsum / Raymond Mill #2	354751	3893294	AG_7	4.90E-01	N	N	25.05	333	16.0	0.549
American Gypsum / Raymond Mill #3	354769	3893305	AG_101	5.89E-01	N	N	25.05	333	25.0	0.549
American Gypsum / Dryer	354827	3893193	AG_15	9.79E+00	N	N	26.09	378	15.3	1.524
American Gypsum / Dryer Wet End Seal	354825	3893053	AG_16	9.99E-02	N	N	26.09	311	25.3	0.518
American Gypsum / Hot Gas Generator, Mill Baghouse	354755	3893242	AG_DC_11	2.46E+00	N	N	30.48	0	20.2	1.219

Notes:

Generally, stack/release characteristics are obtained from "Stack and Emission Measurement Table" form (Permit Application revision of Permit 1962-M1, dated December 2016).

5.0 Modeling Files Description

A summary of the modeling files submitted in support of this analysis are provided in Table 8.

Table 8. Modeling Files Summary.

File Description	File Name
NO ₂ SIL Model Input File	251126 RLSV NOX.ADI
NO ₂ CIA Model Input File	260331 NOX CIA.ADI
PM _{2.5} SIL and CIA Model Input Files	251201 RLSV PM25.ADI
PM ₁₀ SIL Model Input File	251201 RLSV PM10.ADI
SO ₂ SIL Model Input File	251201 RLSV SO2.ADI
Building Downwash Input File	251201 RLSV SO2.bpi
Building Downwash Output File	251201 RLSV SO2.pro

6.0 Modeling Results

The modeling effort for SO₂ and PM₁₀ screened out at the SIL step for all-time averaging cases. Both NO₂ and PM_{2.5} warranted the preparation of CIA models. None of the results from the NO₂ and PM_{2.5} CIA models resulted in an exceedance of any applicable NAAQS or NMAAQs. The results of the SIL and CIA analyses are presented in **Table 9**. Note that the surrounding source inputs were included as prescribed by the COA AQP for the NO₂ CIA analysis. The following special considerations regarding surrounding sources are acknowledged:

- The Mega Corp Diesel Generator is modeled as operating from 8:00 a.m. to 6:00 p.m., per COA AQP's comments;
- The Vulcan RAP Plant Generator is modeled as operating from 6:00 a.m. to 6:00 p.m., per COA AQP's comments;
- The Vulcan RAP Plant Generator utilizes an ISR of 0.15, as it is a diesel generator; per COA AQP Guidance;
- The Vulcan Osuna HMA Asphalt Cement Heater Unit #16 is modeled as a 20-foot release height, per the COA AQP's comment that this is consistent with the regulated entity's model; and
- The Curia NG Boiler Unit 6 has two operating scenarios provided. One of these scenarios is Unit 6 at full load; the other is Unit 6 at 65% load. The full load condition is solely modeled as a conservative measure, as it is understood that the boiler could not be operating at both philosophies concurrently.

Plots displaying the results of the analysis are provided in the ensuing Figures within this section.

Table 9. SIL and CIA Analysis Outputs.

SIL Modeling								
Pollutant	Average Period	Modeled Concentration (Design Value)		SIL	Is Design Value < SIL?	Location of Design Concentration		Location Description
		Basis	µg/m³	µg/m³	Y/N	UTME (m)	UTMN (m)	
NO ₂	1-Hour	H1H	20.10	7.52	N	353902.27	3890778.44	Building Border (east)
	Annual	H1H	1.26	1.00	N	353901.89	3890778.24	Building Border (east)
SO ₂	1-Hour	H1H	2.22	7.80	Y	353901.89	3890778.24	Building Border (east)
PM ₁₀	24-hour	H1H	3.43	5.00	Y	353902.38	3890852.87	Northern Fenceline
PM _{2.5}	24-hour	H1H	3.43	1.20	N	353902.38	3890852.87	Northern Fenceline
	annual	Highest Annual Average	0.89	0.13	N	353902.27	3890853.44	Northern Fenceline

Cumulative Impacts Analysis										
Pollutant	Average Period	Modeled Concentration (Design Value)		Background	Cumulative Concentration	NAAQS / NMAAQS Standard	% of Standard	Location of Design Concentration		Location Description
		Basis	µg/m³	µg/m³	µg/m³	µg/m³		UTME (m)	UTMN (m)	
NO ₂	1-hour	H8H (98th percentile)	85.29	83.1	168.39	188.03	89.6%	353829.32	3890806.25	Western Fenceline

Cumulative Impacts Analysis										
Pollutant	Average Period	Modeled Concentration (Design Value)		Background	Cumulative Concentration	NAAQS / NMAAQS Standard	% of Standard	Location of Design Concentration		Location Description
		Basis	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$		UTME (m)	UTMN (m)	
	annual	annual average	4.38	18	22.38	94.02	23.8%	353901.89	3890778.24	Building Border (east)
PM _{2.5}	24-hour	H8H (98th percentile)	2.77	19.5	22.27	35.00	63.6%	353902.38	3890852.87	Northern Fenceline
	annual	Highest annual average	0.89	7.5	8.39	9.00	93.2%	353902.27	3890853.44	Northern Fenceline

Notes:
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

NAAQS = National Ambient Air Quality Standards

NMAAQS = New Mexico Ambient Air Quality Standards

H1H = highest first high

NO₂ = nitrogen dioxide

PM_{2.5} = particulate matter with an aerodynamic diameter equal to or less than 2.5 microns

PM₁₀ = particulate matter with an aerodynamic diameter equal to or less than 10 microns

SIL = Significant Impact Level

SO₂ = sulfur dioxide

UTME = Universal Transverse Mercator East

UTMN = Universal Transverse Mercator North

NMED Guidelines Section 2.6.7.1: When n years are modeled, the (n+1)th highest concentration over the n-year period is the design value, since this represents an average or expected exceedance rate of one per year.

Figure 2. NO₂ Annual SIL Plot.

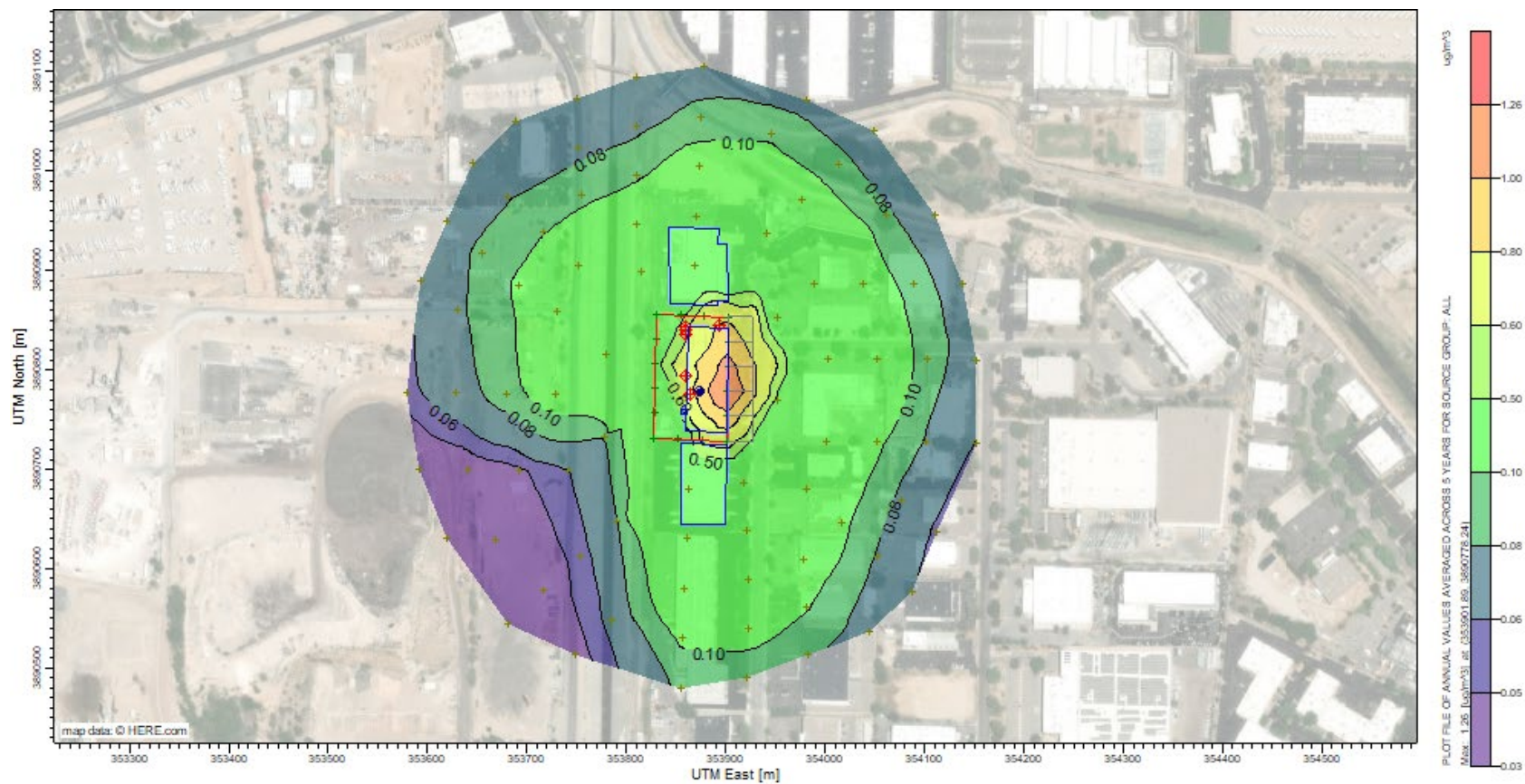


Figure 3. NO₂ 1-Hour SIL Plot.

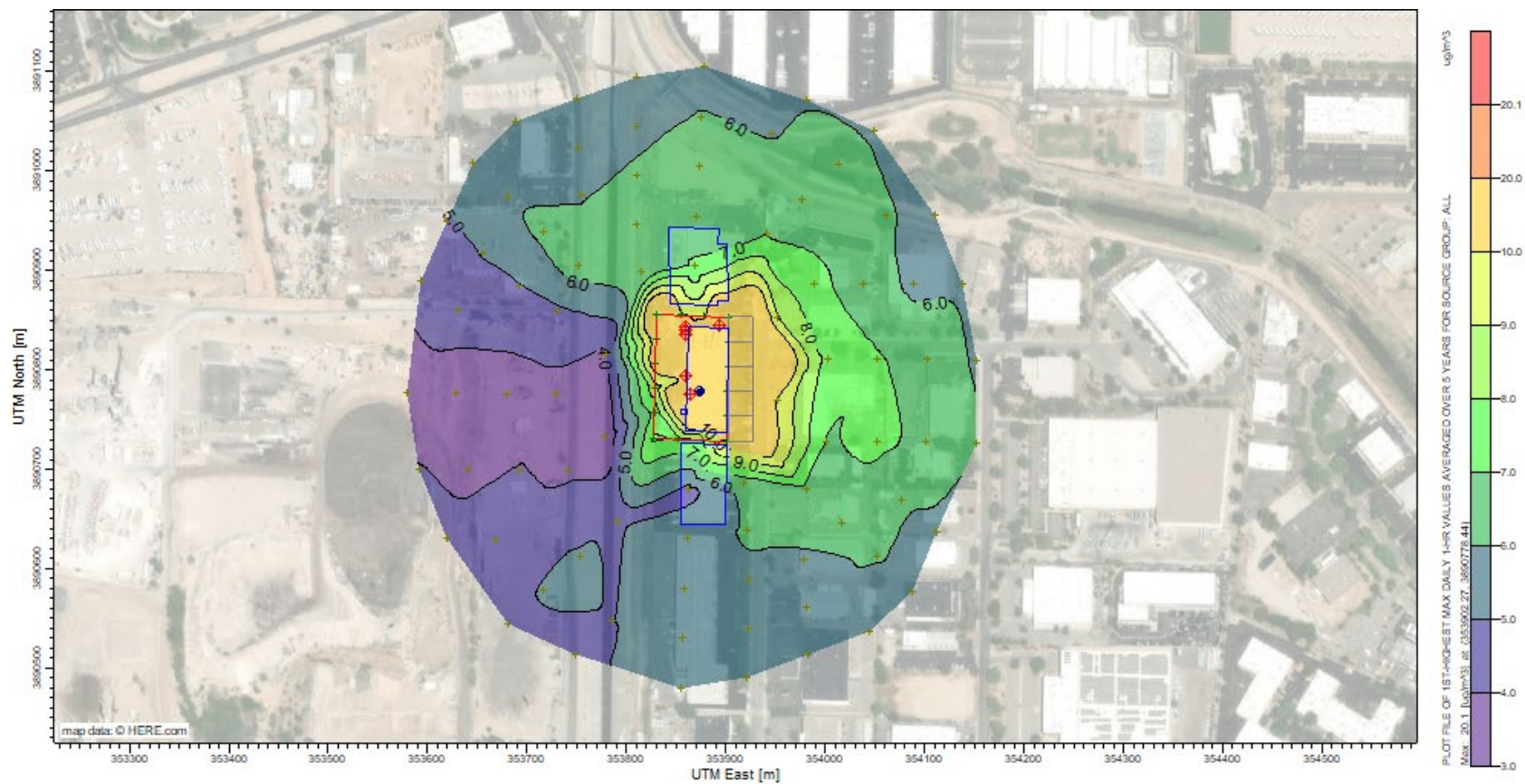


Figure 4. NO₂ Receptors That Experienced an Exceedance of the 1-Hour SIL.

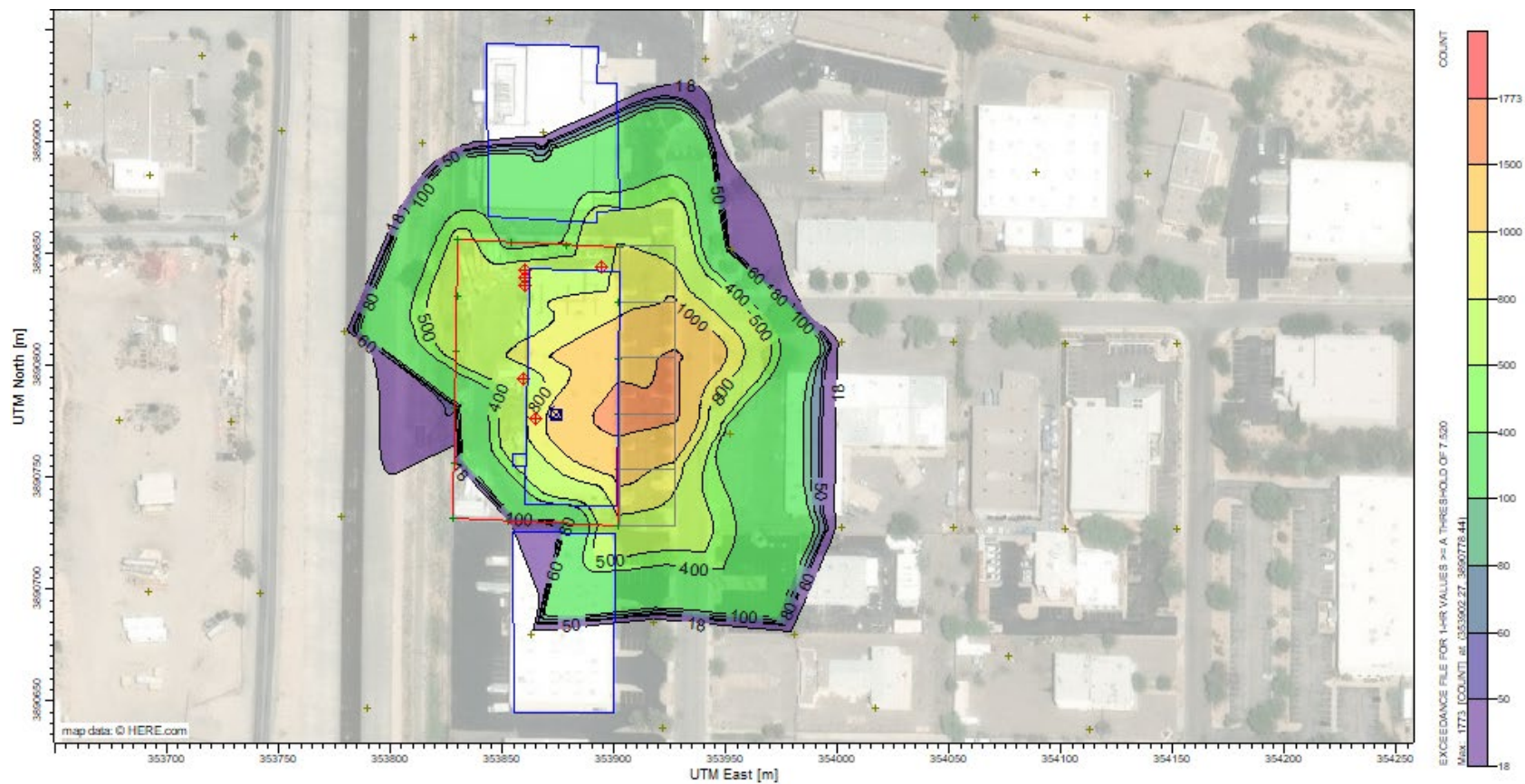


Figure 5. NO₂ 1-Hour CIA Plot.

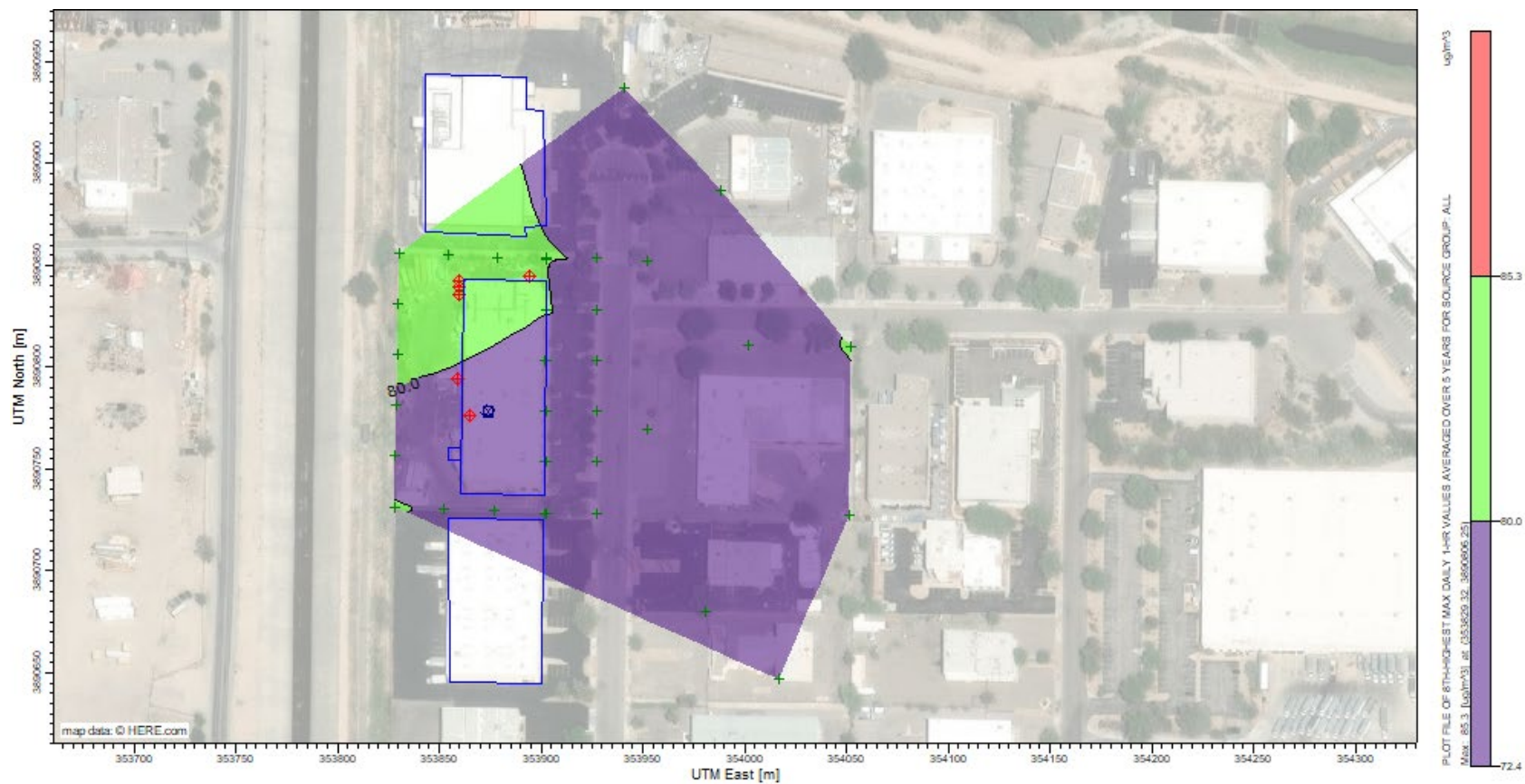


Figure 6. NO₂ Annual CIA Plot.

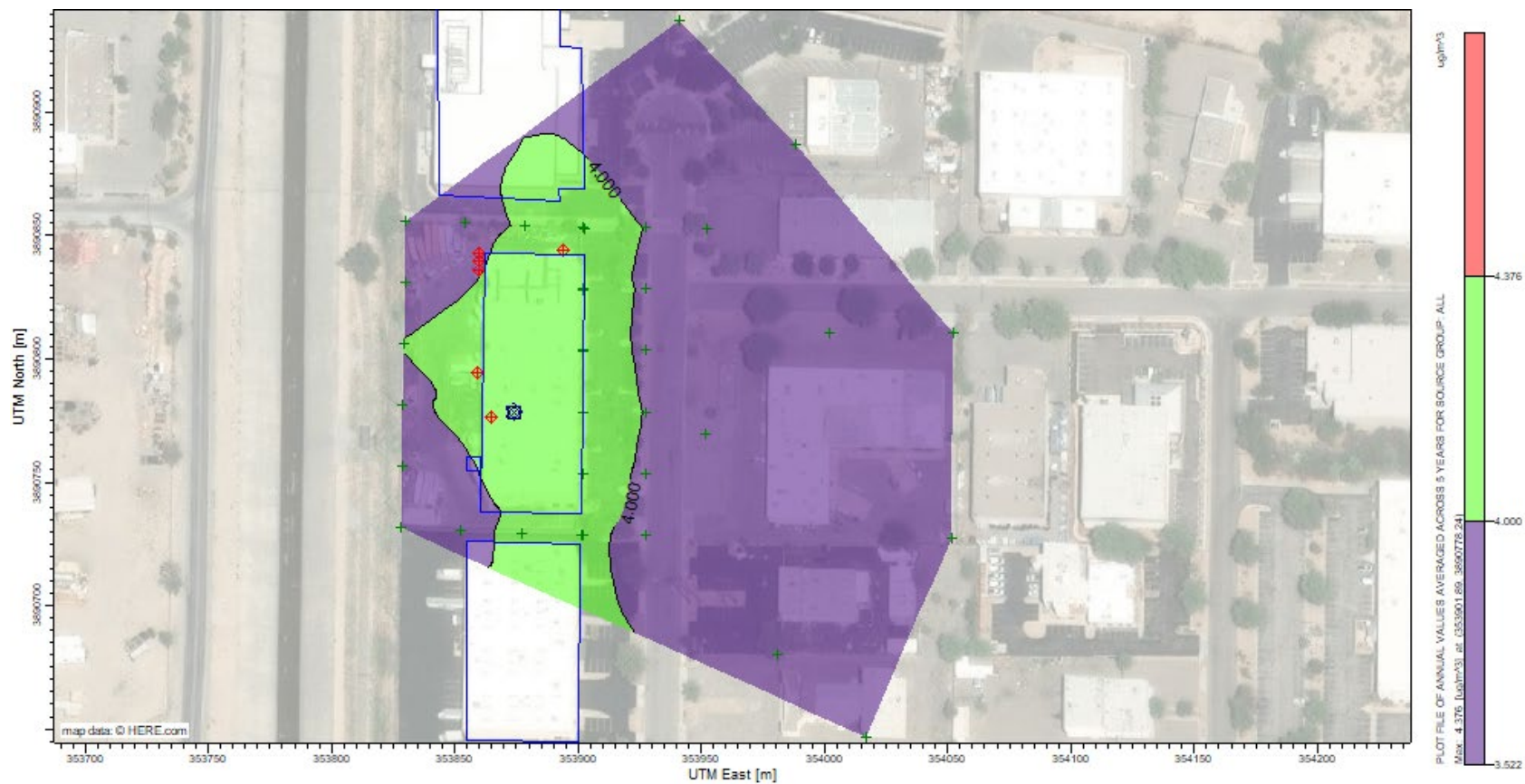


Figure 7. PM₁₀ 24-Hour SIL Plot.

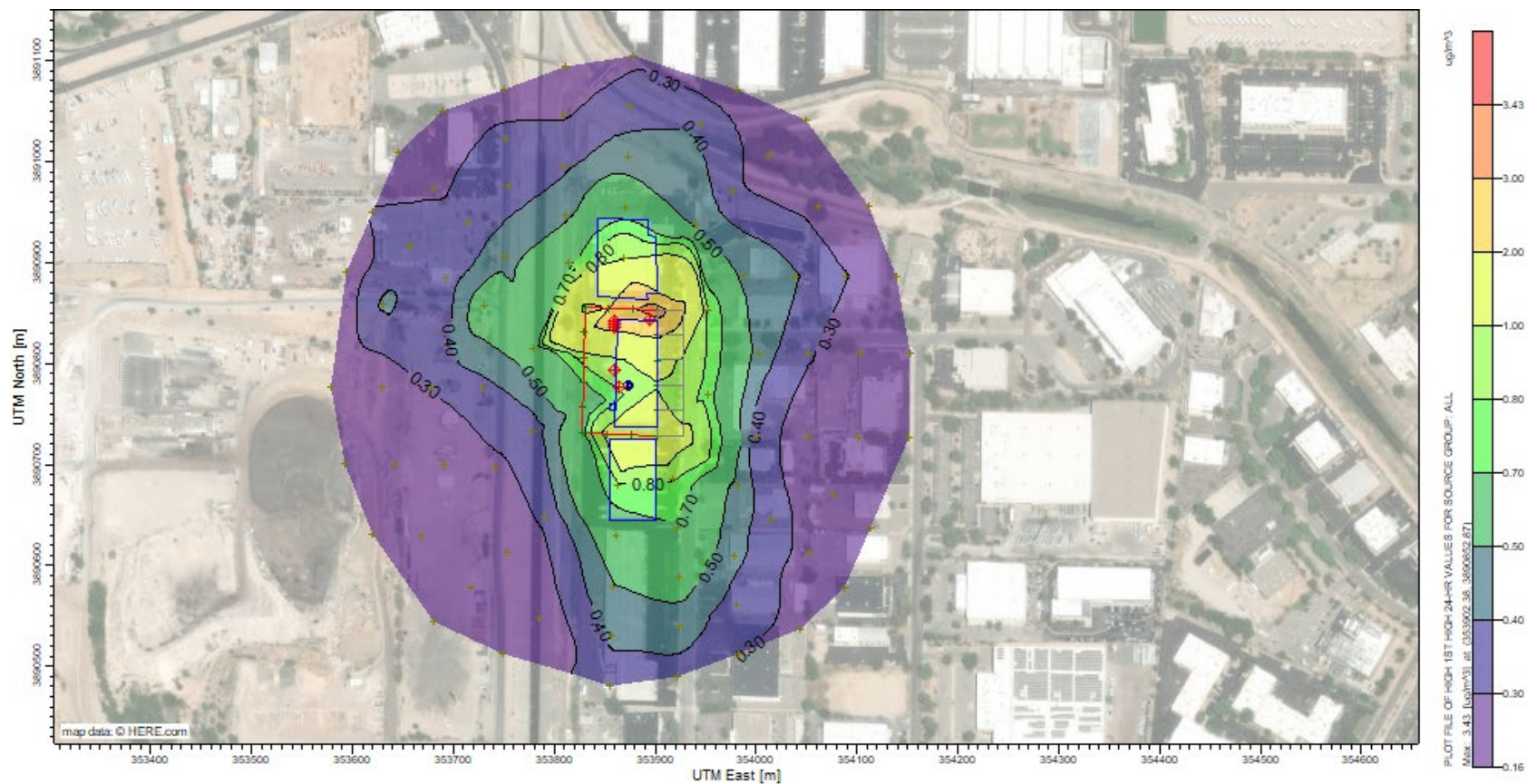


Figure 8. PM_{2.5} 24-Hour SIL Plot.

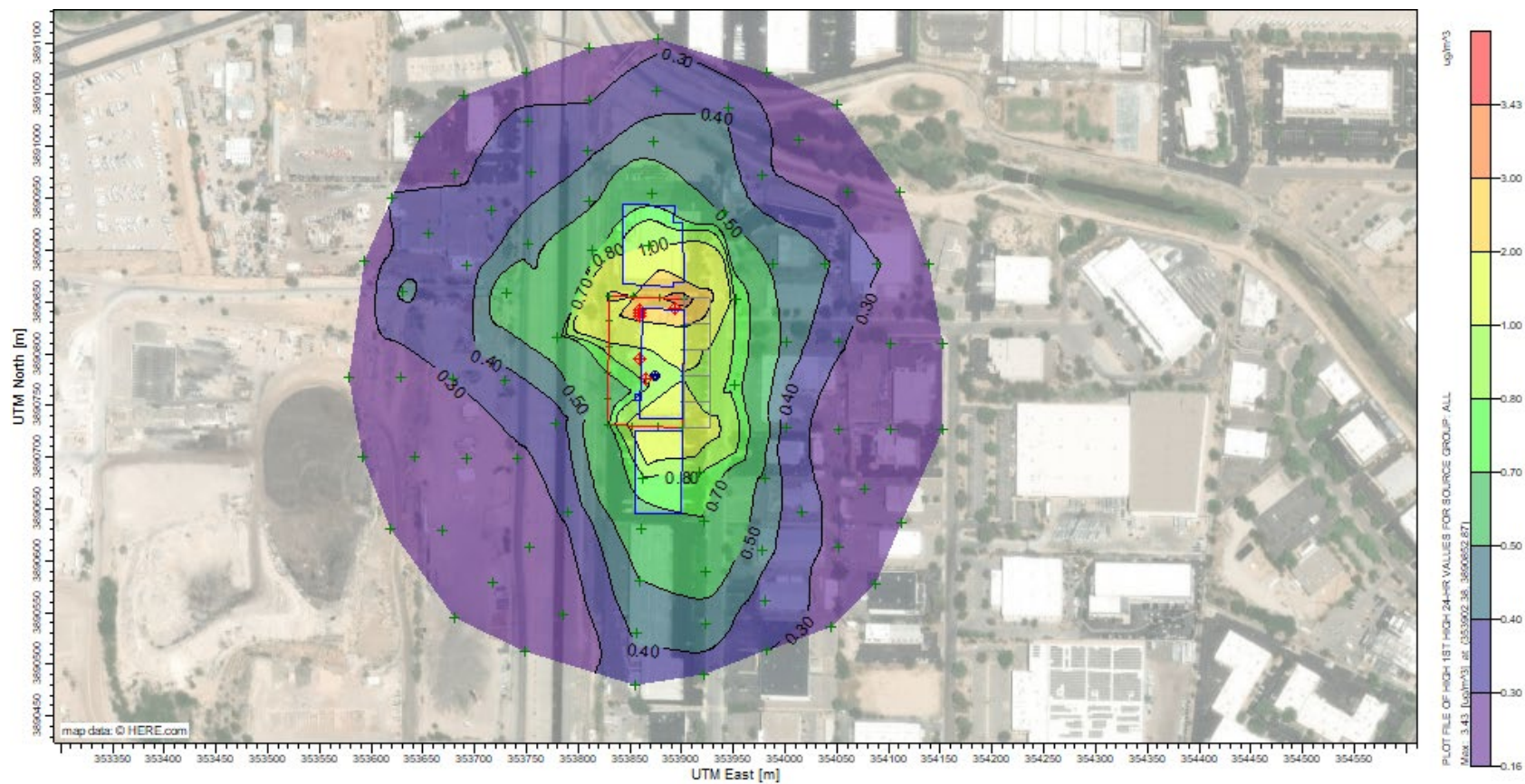


Figure 9. PM_{2.5} 24-Hour CIA Plot.

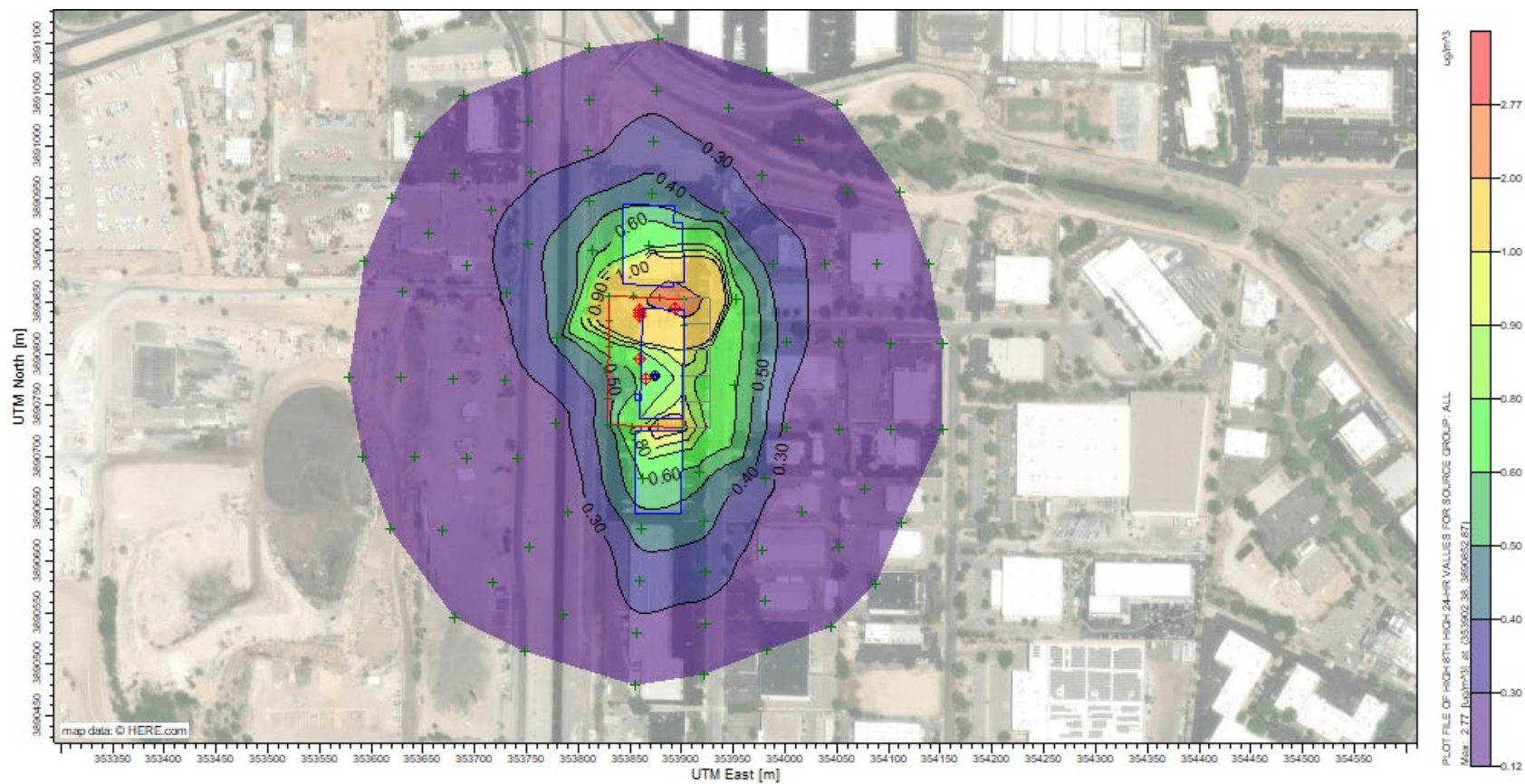


Figure 10. PM_{2.5} Annual SIL and CIA Plot.

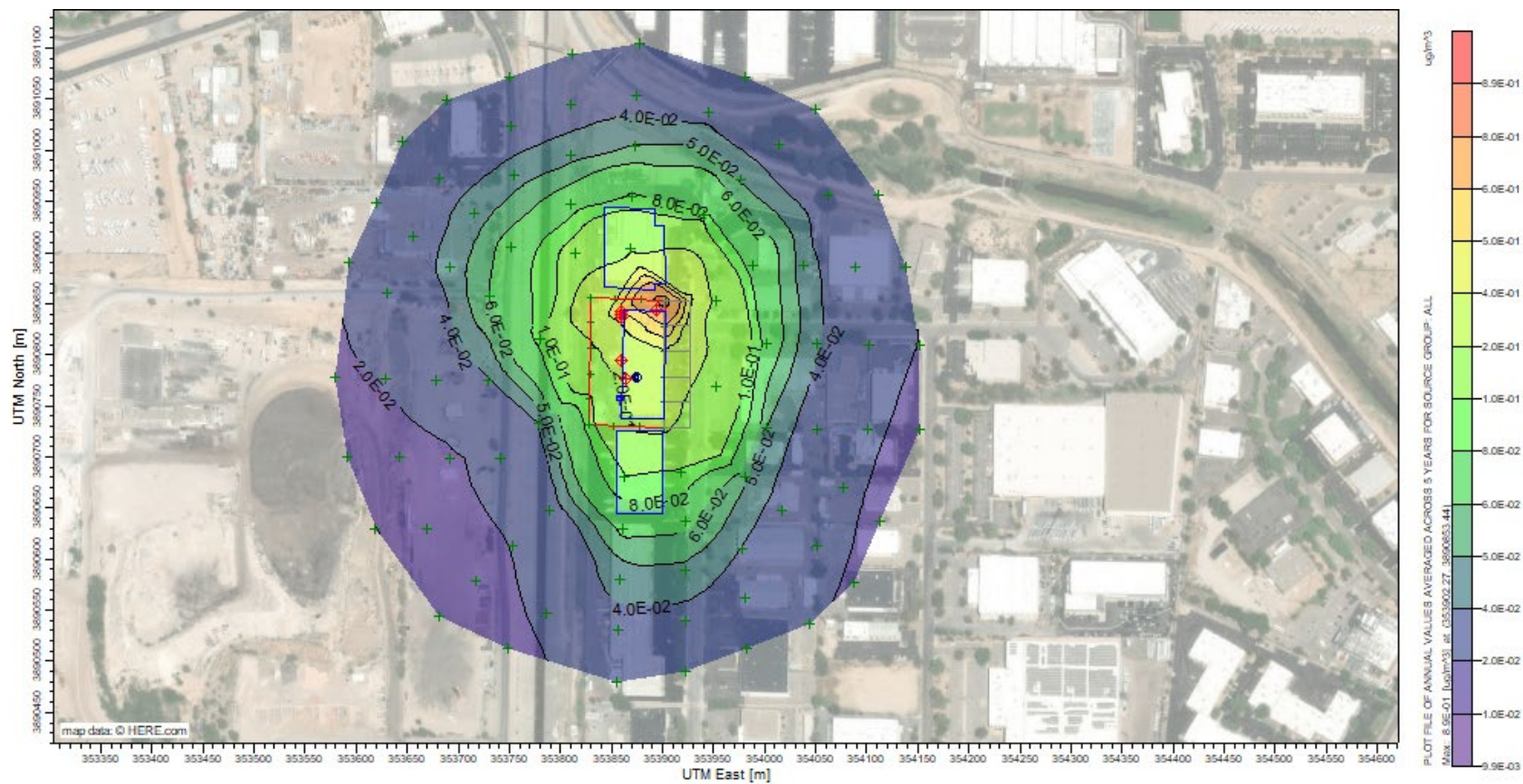
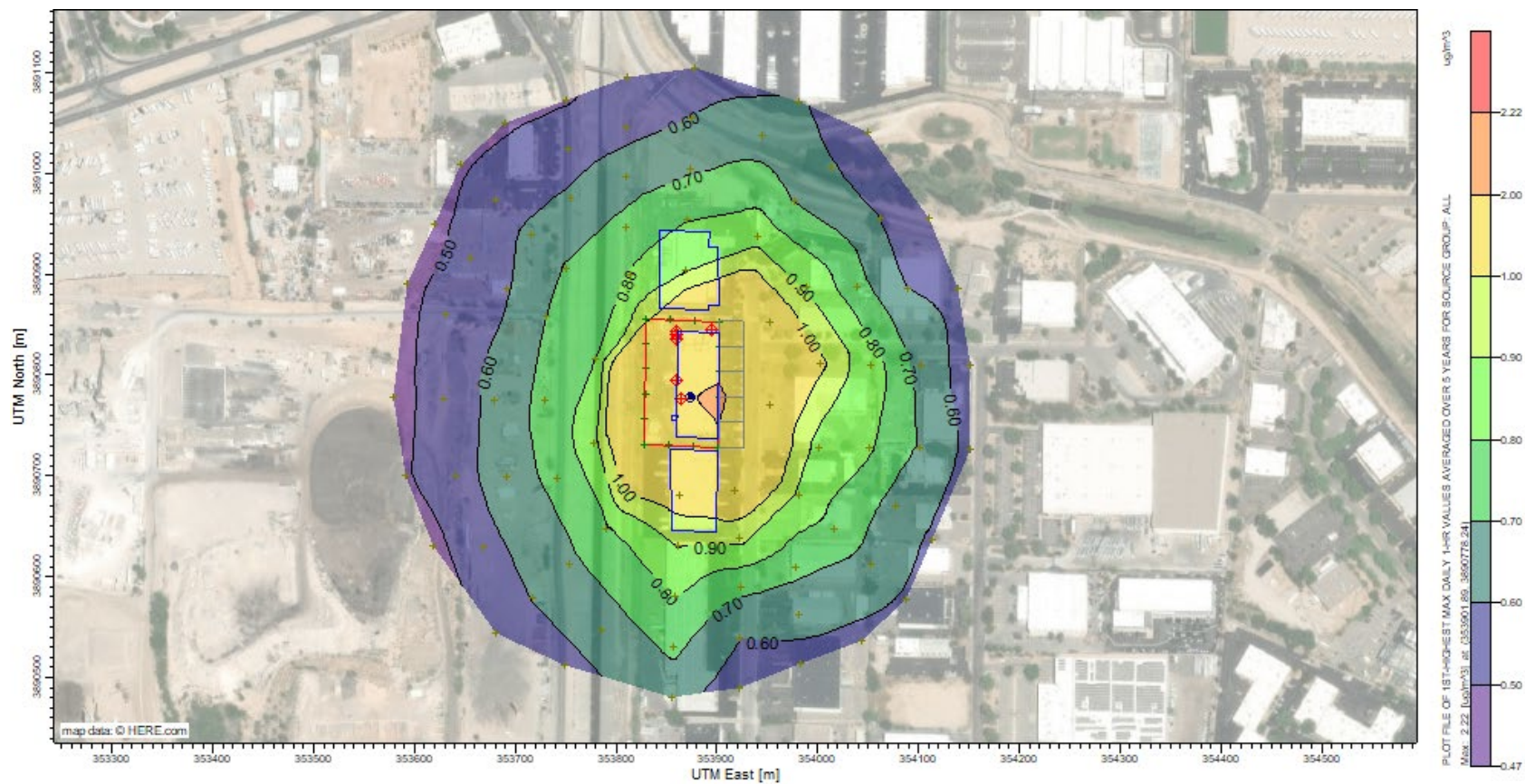


Figure 11. SO₂ 1-Hour SIL Plot.



7.0 Summary / Conclusions

The modeling requirements as described by the COA AQP Guidelines have been satisfied through this effort, and the predicted impacts show that no NMAAQs or NAAQS are exceeded; thus, the Authority to Construct (ATC) permit may be issued. It is anticipated that an hourly operating restriction will be incurred via an ATC permit condition limiting RSC's actual hours of operation (5:00 a.m. to 10:00 p.m.) to align with the constraints utilized within the dispersion model.